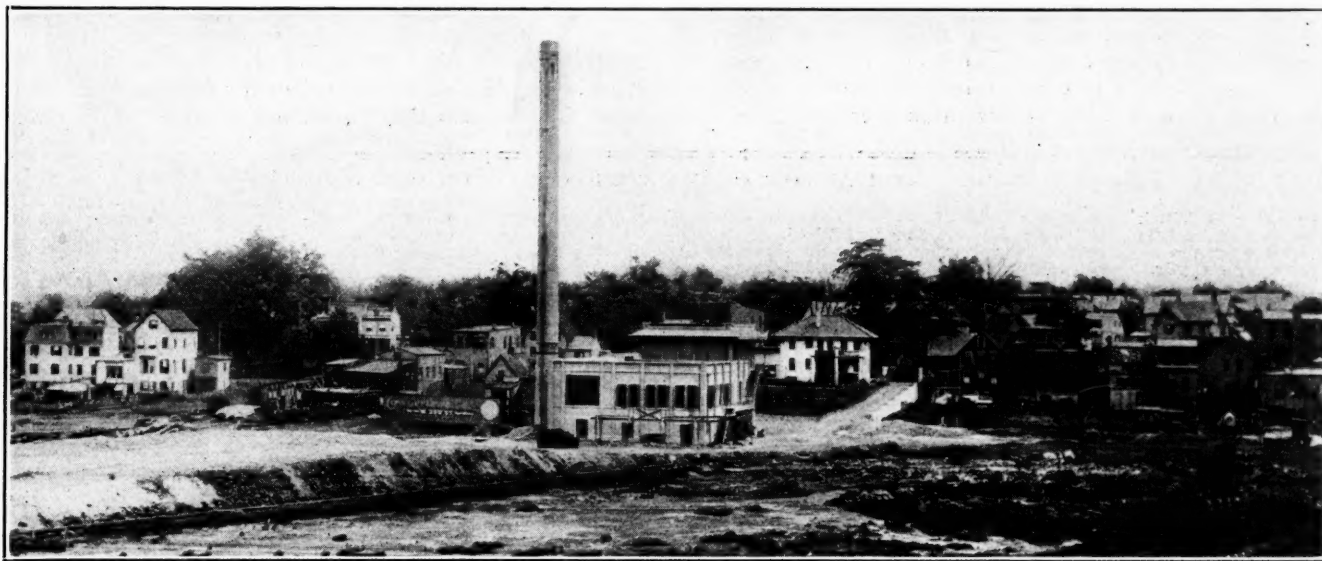


Municipal Journal

Volume XXXIII

NEW YORK, NOVEMBER 14, 1912

No. 20



WEST NEW BRIGHTON DESTRUCTOR, SHOWING PROXIMITY TO RESIDENCE SECTION.

BASING BUDGETS ON PHYSICAL STATISTICS

Method of Keeping Such Statistics in Richmond Borough.—Itemized Costs of Street Cleaning, Refuse Collection and Destruction.—Efficiency Records of Employees and Graded Wages.

The President of the Borough of Richmond, New York City, George Cromwell, has recently made to the Board of Estimate and Apportionment of that city an urgent plea for a method of appropriating funds for the annual maintenance budget, based upon physical statistics, at the same time calling attention to the fact that the same idea was advocated by him more than two years ago. His recommendation was summarized as follows:

1. Lump sum departmental or office appropriation shall be authorized *when founded upon unit cost data and work requirements.*

2. In any department or office where such cost data are available, several salary grades for the same class of work shall be established by the Board of Estimate and Apportionment, so that the head of a department or office may increase or *decrease* wages within specified limits, basing such action upon predetermined standards of work and efficiency records.

3. Each head of a department or office in which fundamental cost data are available shall have direct responsibility in the expenditure of appropriations, the results attained being checked by some independent authority, such as the Mayor, acting through the Commissioners of Accounts, or the Comptroller.

In his opinion, developments during these two years

have made the adoption of this form of appropriation even more desirable than when it was previously recommended. The present restrictive and closely segregated budget disregards entirely the objects to be obtained in the form of measurable services rendered or physical work accomplished.

In support of this idea, President Cromwell presents a communication from his consulting engineer and commissioner of public works, Louis L. Tribus, and also the report for the year 1911 of J. T. Fetherston, the superintendent of street cleaning of the borough. It may be said here that the Street Cleaning Department of Richmond borough has perhaps carried out more thoroughly the idea of cost accounting and physical statistics than any other department of any borough, and probably as fully and intelligently as any department of any city in the country.

Mr. Tribus gives as certain necessities upon which such a method of appropriating funds must be based.

(1) Knowing how much work of each class ought to be done; (2) knowing how much work of each class is actually done; (3) what such work has cost, not as a grand total, but for each unit contributing to the whole; (4) comparing quantity and cost under local conditions with quantity and cost, so far as comparable, in other places and for other corporations.

He considers that it is a serious handicap on the operation of a department to prescribe for it, nine months in advance, just how its money should be expended as to proportion of materials and labor, and just what should be paid to each employee, regardless of individual ability and usefulness. "From an accounting standpoint, segregation of funds may be desirable, but, after all, it is the work to be done that is of importance, and segregation of funds fails utterly to recognize the important factors that make for the success or failure of the work itself."

Says Mr. Fetherston in his report: "Broadly speaking, a municipality is a monopolistic corporation, and as such its operations are not subject to the effect of competition, or some satisfactory substitute therefor. A city differs from a private corporation in that its operations are, almost without exception, performed at cost

"The annual tax budget . . . takes no account of measurable services to be rendered or physical results to be accomplished (in a word, the efficiency of performance), but considers only the intermediate or minor steps involved in the expenditures contemplated. Thus, without a criterion of accomplishment or a substitute for the personal incentive provided by the profits of commerce, the attempt to secure efficiency in municipal affairs is seriously handicapped, and the ambitious administrator is practically limited to that degree of success which can be secured by enforced obedience, while the disinterested official suffers not even the inconvenience of merited censure."

Mr. Fetherston indicates, by figures of unit costs, the progress which his Bureau has made in reducing costs, even in the face of higher prices for both materials and labor, but believes that no further advance can be made

TABLE 1. COMPARISON OF MAINTENANCE COSTS—1909-1910-1911.

Quantity of Work Performed in 1911	Class of Work	1909		1910		1911	
		Unit Costs	Total Cost	Unit Costs	Total Cost	Unit Costs	Total Cost
27,015.3 miles	Street Cleaning by Hand and Machine Brooms..	\$3.15	\$85,098	\$3.11	\$84,017	\$3.14	\$84,813
113,500 cu. yds.	Refuse Collection, Household Wastes and Street Sweepings	0.60	68,100	0.58	65,830	0.57	64,515
113,500 "	Final Disposition, Dumps and Destruction.....	0.158	17,933	0.157	17,819	0.15	17,097
42,190 "	Snow Removal, Roadways	0.17	7,172	0.17	7,172	0.19	8,201
1,552.4 miles	Cleaning Gutters by Hand and Plow	4.59	7,126	5.39	8,367	4.59	7,126
12.76 "	Cleaning Snow from Sidewalks	58.55	747	65.08	830	78.97	1,008
262.2 "	Cleaning Snow from Crosswalks	6.18	1,620	5.96	1,563	6.52	1,710
1,525.4 cu. yds.	Spreading Ashes, Sand, Etc., on Slippery Streets	2.42	3,691	2.03	3,097	2.52	3,839
3,480.7 "	Light Repairs to Macadam	3.27	11,382	3.20	11,148	3.20	11,148
292,257 sq. yds.	Surfacing Streets .....	...	7	...	7	...	...
...	Weeding Gutters and Wings of Roadways, per mile	3.00	877	5.40	1,578	5.31	1,551
...	Miscellaneous Charges .....	...	15,586	...	15,569	...	11,067
...	Inter-Bureau Charges .....	...	7,837	...	5,387	...	4,649
...	Deferred and Outstanding Charges .....	...	5,086	...	6,143	...	4,222
...	Office—Clerical and Supervisory .....	...	8,577	...	10,325	...	9,892
...	Total .....	...	\$240,839	...	\$238,852	...	\$230,838
...	Brought forward 1911 cost.....	...	230,838	...	230,838	...	...
...	Total relative credit in favor of 1911.....	...	\$10,001	...	\$8,014	...	...
Comparative Credit-Unit Cost Work:		...	...	...	...	...	...
...	Total expenditure .....	...	\$240,839	...	\$238,852	...	\$230,838
...	Total of four non-unit items (Miscellaneous, Inter-Bureau, Deferred and Outstanding Charges and Office) .....	...	37,086	...	37,424	...	29,830
...	Relative cost of physical unit work .....	...	\$203,753	...	\$201,428	...	\$201,008
...	1911 brought down .....	...	201,008	...	201,008	...	...
...	Relative credit-physical unit work .....	...	\$2,745	...	\$420	...	...

rather than for profit. The effect is consequently apparent in the form of uncontrolled results, as, for instance, extravagance or inadequate performance, or both. Officially no recognition is given in New York to results, as measured by the relation of accomplishment to expenditure, nor has any serious attempt been made to control the city's activities by such means.

in this direction unless he be allowed to offer some incentive to the employees in the form of variable wages, based upon efficiency of service. His own incentive he apparently finds in the satisfaction of work well done, and the appreciation of it by the few who are competent to judge of its effectiveness.

In fact, department heads are, to a certain extent, en-

TABLE 2. DETAILS OF EXPENDITURES—UNIT COSTS—MAINTENANCE AND FINAL DISPOSITION.

Classification of Work	Salaries and Wages		Hired Teams, Horses and Carts	General Supplies	Materials for Repairs and Replacements by Dept.		Apparatus, Machinery, Vehicles, Harness, Etc.	Maintenance of Auto's, Etc.
	Supervision	Labor			Labor	Open Order		
Street Cleaning by Hand Broom.....	\$9,366.70	\$72,453.78	.....	\$704.25	\$15.02	\$294.12	.....	\$266.56
Street Cleaning by Machine Broom....	.44	2.27	.....	.....	.....	.....	.....	.....
Refuse Collection—Household Wastes..	3,972.63	29,283.92	\$7,927.51	315.16	73.65	705.02	.....	104.03
Refuse Collection—Street Sweepings....	1,190.11	8,029.98	556.49	76.76	14.27	172.62	.....	23.48
Final Disposition at Dumps.....	1,330.43	3,595.51	.....	8.58	12.46	24.81	.....	11.43
Final Disposition at W. N. Brighton Destructor	2,544.38	8,488.99	.....	341.05	240.86	70.25	.....	24.91
Snow Removal from Roadways	615.20	4,204.99	2,921.64	14.12	4.07	30.41	.....	7.29
Clearing Gutters of Snow and Mud by Hand	810.91	6,131.12	.....	4.24	1.80	20.18	.....	20.58
Clearing Gutters of Snow and Mud by Plow .....	.51	5.85	19.50	.02	.02	.08	.....	.....
Clearing Snow from Sidewalks.....	656.36	343.79	.....	.20	.....	.87	.....	1.61
Clearing Snow from Crosswalks.....	191.82	1,485.85	.....	.62	.24	.57	.....	5.09
Spreading Ashes on Slippery Streets...	275.65	2,106.32	3.51	11.21	16.17	21.88	.....	8.47
Spreading Sand on Slippery Streets...	89.70	667.28	.....	3.61	1.39	10.23	.....	2.79
Spreading Screenings on Slippery Streets	3.93	26.59	.....	.16	30.63	.75	.....	.....
Light Repairs to Macadam Roadways..	521.48	2,959.53	.....	21.01	6,518.25	63.20	.....	7.16
Weeding Gutters, etc.....	198.70	1,323.34	.....	.07	.26	3.36	.....	4.59
Miscellaneous Charges—See Item A....	1,273.37	4,024.00	19.00	75.08	756.46	1,542.38	\$2,068.80	.....
Inter-Bureau Charges—See Item B....	356.10	1,473.66	.....	84.41	16.92	44.25	.....	178.78
Deferred and Outstanding Charges—See Item C .....	.....	.....	.....	1,279.73	2,207.76	105.00	.....	.....
Totals	\$23,398.42	\$146,606.77	\$11,447.65	\$2,940.28	\$9,910.23	\$3,109.98	\$2,068.80	\$66.77

couraged in extravagant expenditures, in that the budget allowances each year are to a large extent based upon expenditures of previous years, and should a given department head succeed in keeping his expenditures for this year unexpectedly low, he would very probably be penalized therefor by receiving a smaller allowance next year. Mr. Fetherston calls attention to the suggestion of President Cromwell that the Board of Estimate and Apportionment recognize the necessity for controlling costs and establish work records in all departments where the objects to be accomplished can be reduced to measurable form, in the way of either service rendered or physical work accomplished. Responsibility and power can then be allowed to department heads, since the economy and real efficiency of their departments can be ascertained, for which purpose an independent division of the city's forces would be created for checking the physical statistics of the various departments, in the same way that the comptroller now audits cash payments.

The report of the Bureau of Street Cleaning is given as illustrating to what extent and in what way the physical statistics and cost accounting of a municipality can be kept, these being the actual figures for Richmond borough for the year 1911. Table No. 1 shows the total cost and unit cost for each of the several classes of work performed by the Bureau in the year 1911, together with

the unit costs for the years 1910 and 1909 and what the total costs for those years would have been had the quantity of each class of work performed been the same as that in 1911. From this it appears that there was a relative saving of about \$8,000 in 1911 over 1910, and \$10,000 over 1909. Such cost records have been kept by the Bureau for the last ten years. Had the department not known the amount of each class of work performed each year, it would not have been possible to make this comparison, since almost the only figures available would have been total expenditures, and the total amount of work has increased each year to such an extent that the actual expenditures have been increasing rather than decreasing.

In carrying out the work of the Bureau, all work is planned and scheduled in advance; written instructions are given to the individual workers; responsibility is fixed and definite; rules governing discipline are enforced; cost records are compiled, analyzed and compared; tests and time studies of various classes of work are made as far as possible with the men and means available, and in general efforts for betterments are constantly under consideration.

In the last ten years the employees of the Bureau have increased considerably, the clerks from 1 to 4, inspectors from 1 to 5, foremen and assistant foremen from 5 to 11, laborers and sweepers from 67 to 139, drivers and hostlers from 1 to 63; while in explanation of the last, hired carts have diminished from 28 to 8. In addition to this an assistant superintendent, stationary engineman, a stoker and a painter have been added to the force during the past few years. During the year 61 charges have been preferred against employees for violations of the regulations, and upon investigating these, 6 were found to be without reason, 10 led to dismissals, 6 of the guilty were fined in cash, 30

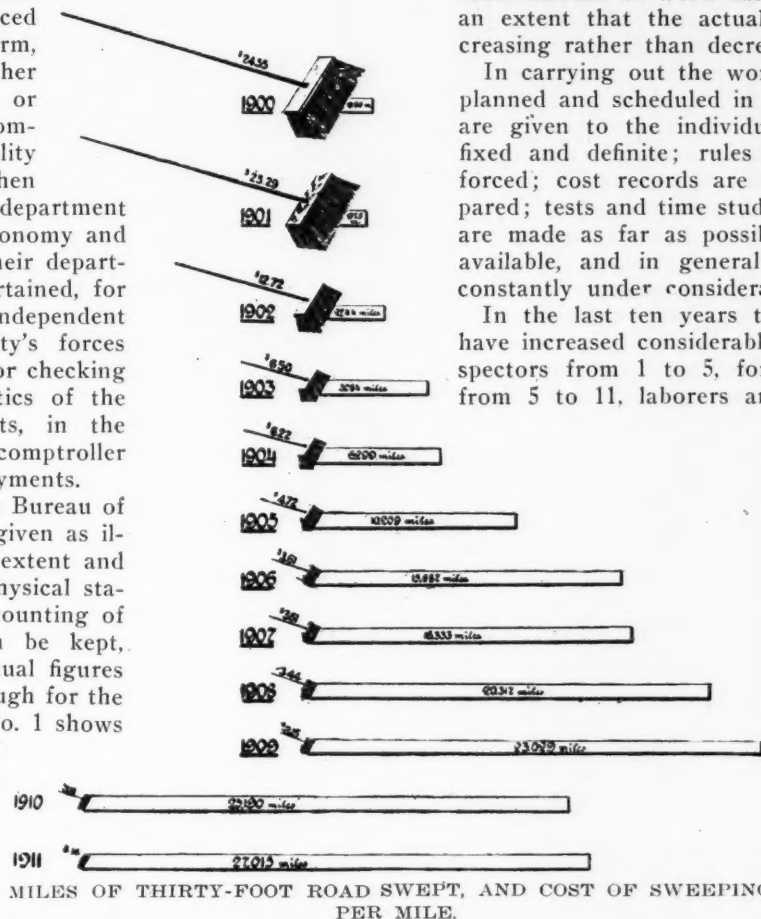


TABLE 2 (Continued).

Classification of Work	Forage, Shoeing and Boarding Horses	Fuel	Contingencies	Supplies Bought on 1910 Funds	Totals	Quantities	Unit Costs
Street Cleaning by Hand Broom...	\$907.86	\$14.36	\$110.28	\$676.78	\$84,809.71	27,014 miles	\$3.14 per mile
Street Cleaning by Machine Broom	1.16	.....	.....	.....	3.87	1.3 miles	2.98 "
Refuse Collection—Household Wastes	8,001.28	134.62	31.79	1,121.13	51,670.74	77,290 cu. yds.	.67 per cu. yd.
Refuse Collection—Street Sweepings	2,294.14	36.59	8.52	441.42	12,844.38	36,210 "	.35 " "
Final Disposition at Dumps	284.51	4.18	4.09	38.90	5,314.90	95,348 "	.05½ " "
Final Disposition at W. N. Brighton Destructor	2.17	47.95	8.33	13.00	11,781.89	9,244 tons	1.27 per ton
Snow Removal from Roadways	322.50	5.20	20.52	55.59	8,201.53	42,190 cu. yds.	.19 per cu. yd.
Clearing Gutters of Snow and Mud by Hand	77.41	.59	18.48	13.03	7,098.34	1,503.4 miles	4.72 per mile
Clearing Gutters of Snow and Mud by Plow	1.68	.....	.....	.....	27.66	49 "	.56 "
Clearing Snow from Sidewalks	1.80	.29	.92	1.77	1,007.61	12.76 "	78.97 "
Clearing Snow from Crosswalks	18.04	.29	5.40	1.77	1,709.69	262.2 "	6.52 "
Spreading Ashes on Slippery Streets	307.70	4.81	4.70	43.57	2,803.99	1,165 cu. yds.	2.41 per cu. yd.
Spreading Sand on Slippery Streets	160.28	2.58	.81	24.67	963.34	342 "	2.82 " "
Spreading Screenings on Slippery Streets	8.37	.14	.....	1.31	71.88	18.4 "	3.91 " "
Light Repairs to Macadam Roadways	906.26	13.73	2.14	135.45	11,148.21	3,480.68 "	3.20 " "
Weeding Gutters, etc.	18.82	.29	.....	1.77	1,551.20	292,257 sq. yds.	53c. per 100 sq. yds.
Miscellaneous Charges—See Item A	307.41	3.48	65.41	931.31	11,066.70		
Inter-Bureau Charges—See Item B	2,242.60	35.97	.....	216.04	4,648.73		
Deferred and Outstanding Charges—See Item C .....	.....	536.25	92.75	.....	4,221.49		
Totals	\$15,863.99	\$841.32	\$374.14	\$3,717.51	\$220,945.86		

were fined in day's pay, 5 were warned, and 18 were punished by deductions made in their efficiency record.

Efficiency records are kept of all employees, and the men rewarded for good work by days off with pay, or recommended for dismissal on account of low marks.

One of the greatest needs of the Bureau is some simple means of rewarding efficient employees by direct increase in wages, or of punishing inefficient men by

reduction in wages. In this way, co-operation can be secured through self interest, while under the existing system work must be accomplished merely through fear of punishment, as the few days off with pay allowed for good records is only a make-shift, and can never replace the direct incentive of a wage increase.

(To be continued.)

TABLE 3. DETAILS OF EXPENDITURES—ITEMS "A," "B" AND "C."

TABLE 3. DETAILS OF EXPENDITURES—ITEMS "A," "B" AND "C."								
	Forage, Shoeing and Boarding Horses	Fuel	Con- tingen- cies	Supplies Bought on 1910 Funds	Totals	Remarks		
Miscellaneous Charges—Item "A":								
General Work	\$10.14	\$0.15	.....	\$1.53	\$1,249.85	Misc. Office and Field Work.		
Grading City Property	287.28	3.29	.....	43.62	2,031.24	Grading at W. N. B. Destructor (Credit Deferred)		
Capital Investment	6.27	.04	52.41	799.36	5,192.09	Machinery, Apparatus, Equipment, etc.		
Construction Work (W. N. B. De- structor)	1.88	.....	5.50	86.80	1,739.78			
Construction Work (Clifton De- structor) .....	.55	.....	.....	.....	214.27	Concrete work, Machinery, etc.		
By-Products .....	.....	.....	.....	.....	158.72	Laying out property, buildings, etc. Bricks, blocks, posts, etc., for ex- perimental work and Budget Ex- hibit		
Crushing Clinker .....	.....	.....	.....	.....	293.09	Crushing mass clinker to different sizes. Allow credit of \$870 for clinker used		
Experimental Work Refuse Col- lection .....	.....	.....	.....	.....	16.89	Refuse collection test data		
Experimental Work Refuse De- struction .....	.90	.....	7.50	.....	159.39	Work on experimental cell, charts, etc.		
Seizure of Incumbrances.....	.39	.....	.....	.....	11.38	Seizure of incumbrances, sales, etc.		
Totals	\$307.41	\$3.48	\$65.41	\$931.31	\$11,066.70			
Inter-Bureau Charges—Item "B":								
General Administration	\$270.46	\$4.29	.....	\$24.96	\$629.68			
Bureau of Engineering—Const. Div.	543.10	8.71	.....	50.69	1,087.52	Amounts due B. S. C. from other bureaus for maintenance of horses and equipment.		
Bureau of Engineering—Topo. Div.	46.74	.81	.....	5.22	121.49			
Bureau of Highways .....	.....	.....	.....	.....	37.11			
Bureau of Sewers	1,151.97	18.14	.....	111.81	2,294.99			
Bureau of Pub. Bldgs. & Offices	230.33	4.02	.....	23.36	459.09			
Dept. of Water Supply Gas and Electricity .....	.....	.....	.....	.....	18.85			
Totals	\$2,242.60	\$35.97	.....	\$216.04	\$4,648.73			
Deferred and Outstanding Charges— Item "C":								
Outstanding Orders Carried over to 1912 .....	.....	.....	\$26.10	.....	\$822.70			
Supplies .....	.....	\$536.25	66.65	.....	3,398.79			
Totals .....	.....	\$536.25	\$92.75	.....	\$4,221.49			
Maintenance of B. S. C. Horses:								
Draught Horses, Stable "A"	\$6,967.35	\$119.35	.....	\$1,015.69	\$14,284.60			
Draught Horses, Stable "B"	4,781.77	72.49	.....	695.65	10,094.44	Cost per horse work hour \$0.22		
Light Driving Horses, Stables "A" and "B"	1,871.27	29.31	.....	176.73	3,633.58			
	Salaries and Wages		Hired Teams, Horses and Carts	General Supplies	Materials for Repairs and Re- placements by Dept. Labor	Repairs and Re- placements Open Order	Appa- ratus, Machin- ery Vehicles Harness Etc.	Mainte- nance of Auto's. Etc.
Miscellaneous Charges—Item "A":								
General Work	Supervision	Labor	.....	.....	.....	.....	.....	.....
Grading City Property	\$856.15	\$381.21	.....	\$0.21	\$0.06	\$0.40	.....	.....
Capital Investment	195.56	1,481.17	.....	6.63	1.53	12.16	.....	.....
Construction Work (W. N. B. De- structor)	30.63	301.51	14.00	1.08	397.68	1,520.31	2,068.80	.....
Construction Work (Clifton Destructor)	119.82	1,189.15	.....	32.11	304.44	.08	.....	.....
By-Products .....	.05	180.52	.....	33.15	.....	.....	.....	.....
Crushing Clinker	9.96	107.26	.....	.....	41.50	.....	.....	.....
Experimental Work Refuse Collection..	23.24	242.80	5.00	1.40	11.25	9.40	.....	.....
Experimental Work Refuse Destruction	16.89	.....	.....	.....	.....	.....	.....	.....
Seizure of Incumbrances.....	21.01	129.48	.....	.50	.....	.....	.....	.....
	.06	10.90	.....	.....	.....	.03	.....	.....
Totals	\$1,273.37	\$4,024.00	\$19.00	\$75.08	\$756.46	\$1,542.38	\$2,068.80	.....
Inter-Bureau Charges—Item "B":								
General Administration	\$39.86	\$169.07	.....	\$6.11	\$1.50	\$3.85	.....	\$109.58
Bureau of Engineering—Const. Div.	80.42	342.42	.....	33.97	3.00	7.72	.....	17.49
Bureau of Engineering—Topo. Div.	12.29	34.82	.....	10.45	.84	1.17	.....	9.15
Bureau of Highways .....	.....	.....	.....	20.80	.....	.....	.....	16.31
Bureau of Sewers	186.42	769.78	.....	10.82	10.08	27.71	.....	8.26
Bureau of Public Bldgs & Offices	37.11	157.57	.....	1.09	1.50	3.80	.....	.31
Dept. of Water Supply, Gas & Elect'y...	.....	.....	.....	1.17	.....	.....	.....	17.68
Totals	\$356.10	\$1,473.66	.....	\$84.41	\$16.92	\$44.25	.....	\$178.78
Deferred and Outstanding Charges—Item "C":								
Outstanding Orders Carried over to 1912	.....	.....	.....	\$176.60	\$515.00	\$105.00	.....	.....
Supplies .....	.....	.....	.....	1,103.13	1,692.76	.....	.....	.....
Totals .....	.....	.....	.....	\$1,279.73	\$2,207.76	\$105.00	.....	.....
Maintenance of B. S. C. Horses:								
Draught Horses, Stable "A"	\$1,016.69	\$4,333.28	.....	\$250.27	\$37.89	\$544.08	.....	.....
Draught Horses, Stable "B"	803.61	3,230.77	.....	174.54	50.18	285.43	.....	.....
Light Driving Horses, Stables "A" & "B"	289.92	1,206.50	.....	7.49	14.58	37.78	.....	.....

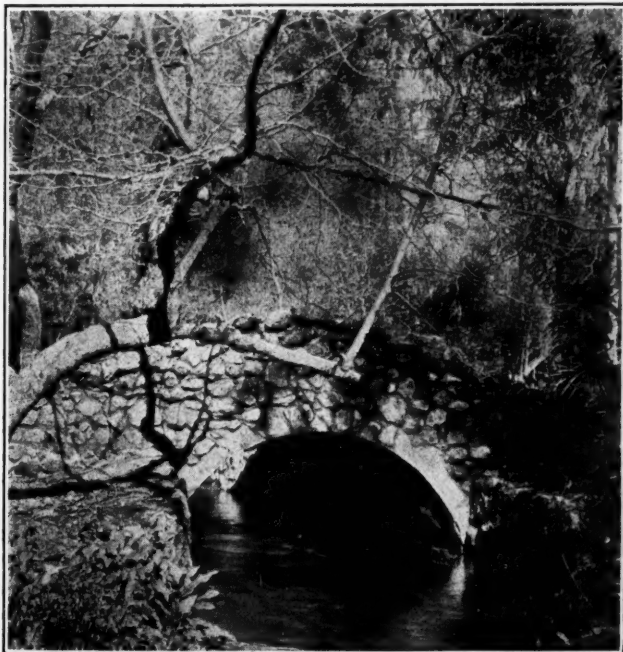
COBBLE STONES AS BUILDING MATERIAL.

In Southern California, where the light, sandy soil is often covered with cobble stones, the landscape gardeners of the various city parks have found a very cheap, artistic and permanent building material in the rough stones cleared from the land. They are so plentiful that in many places they are to be had for the hauling, and where land is being cleared in the vicinity of cities the sign "Free Cobbles" is to be found on many a mound of stones at the corner of a field. Just to show the possibilities of this free building material, the photographs from parks in Los Angeles, Santa Monica, and Pomona, Cal., are of interest. It will be seen that, with the addition of a good mixture of cement, such elaborate structures as band-stands, rest rooms, comfort stations and bridges



COBBLE BAND STAND, POMONA PARK.

may be built in a very artistic style from the rounded stones, while merely ornamental features such as urns, drinking fountains and supports for railings along drives are very effective against a background of foliage, when constructed of this rustic material. There is no comparison between the cast iron "ornaments" that so often disfigure our public gardens and these artistic creations. In



COBBLE BRIDGE, POMONA CITY PARK.



COBBLE POSTS IN CITY PARK, POMONA, CAL.

properly built with the use of good cement mortar, they will last indefinitely, as the cement hardens with age and the cobble stones show no bad effects from the weather. Not requiring paint, there is no annual brush work needed, as with wooden or metal structures, which is a considerable saving, and the original cost is considerably less than when more conventional materials are used.



FLOWER URN, LOS ANGELES.



COBBLE DRINKING FOUNTAIN, EASTLAKE PARK, LOS ANGELES.

GOVERNMENT FOR PENNSYLVANIA CITIES.

Representatives of the third class cities of Pennsylvania at their recent convention debated the subject of the most desirable characteristics of city charters, adapted to medium sized cities in that state, with the purpose in view of recommending the authorization of city charters in conformity therewith by the State Legislature of 1913.

The bill proposed would wipe out ward lines in the election of councilmen, five of whom are to be elected at large, one of them to serve as mayor. The mayor's term would be four years, while each of the councilmen would be elected for a two-year term. The five departments over which the councilmen or commissioners would have charge would be those of public affairs, accounts and finance, public safety, streets and public im-

provements, parks and public property. The only other elective office is that of auditor, all other officers being appointed by the council. The problem of eliminating party selection of candidates it is proposed to secure by the following method: Any person may be proposed for municipal office by the filing of a petition signed by 25 registered voters of the municipality. The names of those persons so proposed shall be placed on a primary ballot without marks of any kind to indicate party or political affiliations; such non-partisan ballot to be the only ballot used at the primary election. The two persons receiving the highest number of votes for mayor at the primary election to be the only candidates placed on the general election ballot; the eight persons receiving the highest number of votes to be the nominees, and the only persons placed on the general municipal ballot for the office of councilmen, or a less number if less than eight shall be proposed.

The delegates decided that civil service for the smaller cities was non-essential at this time. The recall was the point of most discussion, and it was finally decided by a vote of 29 to 24 not to include this. The provisions relative to the initiative and referendum have been included in the bill similar in general features to that now in operation in the state of Iowa, making the initiative operative upon a 15 per cent. petition, and the referendum upon a 10 per cent. petition.

HAVERHILL POLICE SIGNAL SYSTEM.

Haverhill, Mass., has recently completed fire alarm and police signal systems at a cost of about \$21,000, and they are now in service. Both were constructed by the Gamewell Fire Alarm Telegraph Company after their standard designs, but some details of the police signal system are to be found in only a few cities, at least of those as small as Haverhill (45,000). This system is described as follows:

Starting with the signal box on the street the alarm is registered at headquarters. In the box is a dial on which is marked the different points for calling the patrol wagon, the police ambulance or for connecting the box by telephone with the station. Other points are for officers' duty calls.

The pointer remains at "wagon" all the time so that the simple turning of a key sends in an alarm, it not being required that the box be opened. If a "citizens" key is used, the key locks itself into the box and is secured there until the officer returns to release it. This key is used when the officer requires assistance and passes his key to a bystander to call the patrol wagon.

When the officer wishes to put in the call for the wagon or to telephone or to register his duty call he opens the box to do it and moves the pointer along the dial, but the pointer always returns to its position at "wagon" for an emergency. In this box is a perfect telephone with which he may get into instant communication with headquarters or headquarters may reach him. The set at the station governs the entire system.

Each of the four circuits, controlling the 25 street boxes, is separately controlled; each may be tested, cut out or switched over to connect with another. A call is registered on a paper tape which runs through a stamping clock so that a record of calls is automatically kept. When the call comes into relay it is passed on to the registering machine which punches it into the tape, the officer's number followed by the box number. Or if a wagon or ambulance call is sent in a special mark is indicated on the tape and at the same time an alarm sounds.

A disk in the centre of the switchboard drops down to sound the alarm and keeps the bell sounding until atten-

tion is given to the alarm. The station officer by noting the signal marked on the tape can tell what is wanted and where it is wanted. If it is a wagon call he reads the box number and then sets an instrument at that number, the simple pulling of a lever transmitting the alarm to the patrol house where it is registered on an indicator very much the same as the indicators used in the fire stations.

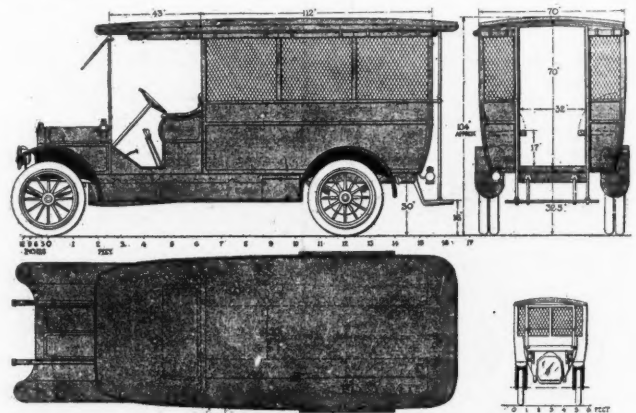
If it is a telephone call the station officer throws in a switch which opens his telephone line and then talks to the officer at the box, throwing the switch back into its first position when he has finished and leaving the line clear for duty calls or other uses.

If a complaint is received at headquarters first and is to be sent to the officer on the route, a switch is set at a certain point so that when the officer goes to the box and opens the door he gets an alarm in the box, indicating that he is wanted and then he takes down his telephone and talks, for the fact that he has heard the alarm has been noted by means of a repeater on the headquarters switchboard and the station officer is waiting for him.

The register tape is taken care of by a spring wind and from it the record is taken and kept on a daily report sheet, every call being marked with the call number, the box number, the year, month, day, hour and minute, and all by the electrically controlled calculigraph, a clock which keeps the time and stamps it on every call that is registered.

NEW YORK AUTOMOBILE POLICE PATROL.

The Police Department of New York City has prepared specifications for a standard body for automobile patrol wagons. These bodies are larger than the horse-drawn patrol, the inside accommodating twelve persons and the driver's seat two. The body is entirely of wood. Ash slats are used for the two seats running lengthwise of the body. The same wood for the frame and panelling for 34 inches from the floor at the front, sides and back. Above this all sides of the body are carried to the wagon top with heavy wire mesh. Outside these wire screens are roll-up blinds of black waterproof material in which are transparent celluloid insertions to admit light. Heavy linoleum laid with brass strip binding covers the floor,



STYLE AND DIMENSIONS OF NEW YORK AUTO PATROL BODY.

except for a wide tread plate at the door. The only upholstery is on the outside front seat, which is covered with tufted black leather. Under this seat is the gasoline tank.

When used as an ambulance the inside seats fold back against the sides. A stretcher forms part of the equipment and is carried under one of the seats. The ambulance attendants ride on the rear step, a vertical handrail being provided for this purpose. The body weighs about 1,000 pounds.

Municipal Journal

Published Weekly at
50 Union Square (Fourth Ave. and 17th St.), New York
By Municipal Journal and Engineer, Inc.
Telephone, 2805 Stuyvesant, New York
Western Office, 144 Monadnock Block, Chicago

S. W. HUME, President
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F. E. PUFFER, Assistant Editor

Subscription Rates
United States and possessions, Mexico, Cuba.....\$3.00 per year
All other countries..... 4.00 per year
Entered as second-class matter, January 3, 1906, at the Post Office at New York, N. Y., under the Act of Congress of March 3, 1879.

CHANGE OF ADDRESS

Subscribers are requested to notify us of changes of address, giving both old and new addresses.

Contributions suitable for this paper, either in the form of special articles or of letters discussing municipal matters, are invited and paid for.

Subscribers desiring information concerning municipal matters are requested to call upon MUNICIPAL JOURNAL, which has unusual facilities for furnishing the same, and will do so gladly and without cost.

NOVEMBER 14, 1912.

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Value of Physical Statistics.

The keeping of physical statistics by municipal departments and their utilization in the calculation of unit costs has been discussed several times by us during the past year or two. In this issue we present further argument in their favor by the president of one of the boroughs of New York City, the chief point which he makes being the opportunity which they offer for rational budget making or appropriation of funds for future municipal operations. At present, the argument commonly offered by the official asking for an appropriation for his department is that he used a certain amount of money for running the department this year, and as the city is growing he will need a larger amount next year. Just how much larger the amount should be probably the official himself does not know, and no effort is made by him to prove or by the taxpayers to learn whether the amount received this year was expended economically.

The idea advanced in the article in question is that the superintendent of street cleaning, for instance, should be able to say that the cleaning of asphalt streets cost so much per great square

this year, the amount of asphalt pavement to be cleaned next year will be increased by a given amount, and consequently the appropriation required for this particular service is readily calculated, and this calculation should be made the basis of his demand; and the amount requested for each other item of expenditure should be similarly calculated. The official can thus give a logical reason for the amount which he requests, and can state positively that if the amount is less than he asks, a certain percentage of the work which he had outlined must be omitted.

The tables contained in this article show that the costs are kept in considerable detail by the Bureau of Street Cleaning of Richmond Borough, but even these do not give all the details of their records, as lack of room prevents this. For instance, the cost of cleaning all classes of pavement is lumped together in these tables, while the bureau has, we believe, figures showing the cost of the various kinds of pavements and to a certain extent of the same pavement under different degrees of deterioration.

It is probable that those who study this article and the tables will quickly recognize that the value of them for comparison with expenditures by other cities is greatly lessened by unavoidable uncertainty as to what is covered by the several items. For instance, does street cleaning include the removal of the sweepings as well as cleaning, does it include a part of the general expenses of the clerical force, etc.? To exactly explain what is included under each one of these items would give undesirable length to a municipal report. What is needed is a set of standards for the various units which shall be generally adopted, so that when it is said that street cleaning cost a certain amount in any city it will be clear without lengthy explanation just what is included in the term "street cleaning," and easy comparison can be made with costs in other cities. Experts in municipal activities could do a great service by compiling standards which would meet ready acceptance.

Municipal Reference Libraries.

The following is an extract from an address by Homer Talbot, librarian of the Kansas City Municipal Reference Library, before the Civic League of Improvement Clubs of San Francisco:

The idea of reference libraries first had its origin in the state governments through a desire to utilize the data which the universities possessed in assisting the legislature in passing upon important measures similar to those that had been enacted or proposed in other states. There are now eighteen states in the Union that have state reference libraries. Wisconsin was one of the first states to establish a state reference library. The utility of this library was shown at the first session of the legislature after its establishment. A lobbyist was endeavoring to secure concessions for a private corporation in connection with an exposition which was about to be held in Wisconsin, and he declared that such a proposition as he proposed was the general custom in all expositions. The secretary of the reference library was requested to ascertain the facts. He telegraphed thirty-two states and the following morning placed before the assembly incontrovertible evidence that the claims of the lobbyist were entirely unfounded.

A similar attempt of greater importance was frustrated in Missouri in a similar manner. There was an application for a franchise, and data were procured immediately concerning franchise conditions in other cities and states, with a result that the franchise which was granted was an indeterminate permit where the rates were based upon physical values and no franchise

value was allowed. This law has been in force for four years and has met with no opposition. It has proved fair to the corporations and fair to the people.

Such libraries are, however, of more importance to the city than to the state because the city is nearer to the people and has to deal more largely with projects of immediate concern to the people. Statistics show that the expenditures of city governments in the United States equal the expenditures of the states and nation combined. It is therefore necessary that special care should be taken to minimize these expenditures. There are six cities now having municipal reference libraries: Boston, Chicago, Milwaukee, Newark, Kansas City, St. Louis.

The municipal reference library was established in Kansas City only two years ago. It met with much opposition because the politicians did not wish to have their standards compared with those of other cities and did not wish to be dictated to as to how they should conduct their departments. The municipal reference library in Kansas City has proven to be a great success. One of the first problems that it helped to solve was the abolition of the pawnshop evils. It was found that pawnshops were more injurious than the saloons. The reference librarian secured information from various cities and proposed an ordinance accordingly. The attorney for the pawn brokers claimed there was no such an ordinance to be found in any other city and that this was a violation of the Constitution and an infringement upon the rights of a citizen to conduct a legitimate business. The data presented through the reference library completely refuted these claims.

Data concerning gas rates, play grounds, municipal electric lighting, were secured relative to pending measures and guided the councilmen in avoiding the errors permitted by other cities.

The municipal reference library is without question one of the best paying investments for any city. We had to start the reference library without any appropriation whatever in order to demonstrate what it could do. We now have an appropriation of \$3,000

SEPTIC TANK PATENT.

Chicago, Ill., Oct. 22, 1912.

The Editor Municipal Journal & Engineer,
50 Union Square, New York City.

Dear Sir.—In demanding recognition of Cameron's Septic Process patent in connection with the Imhoff tank, we should perhaps explain that there is no conflict whatever between the two patents, inasmuch as the Imhoff patent covers merely the apparatus peculiar to the Imhoff type of septic tank, whereas the Cameron patent covers the process, without infringing which the Imhoff tank cannot be used.

During Dr. Imhoff's recent visit in this country the writer had an opportunity to meet him, and this phase of the case was discussed quite freely. In the course of conversation Dr. Imhoff admitted that his patent in no sense covered the process involved in its operation, and he stated further that prospective users of his device were so advised by the engineers who are exploiting the Imhoff tank; he told me, moreover, that he had recently advised frequent removal of the deposited solids from all tanks installed under his apparatus patent in the belief that such frequent removal of solids would successfully evade the Cameron patent covering the septic process.

Dr. Imhoff's views on this subject are shared by a number of engineers in this country, and are due to a misunderstanding of the decision of the United States Circuit Court of Appeals sustaining the process claims of the Cameron patent, which decision they have claimed is indefinite and does not clearly specify the distinction between a septic tank and a settling or sedimentation tank. There is, too, an indefinite but absolutely incorrect idea among engineers that if a tank, even when admitted to be a septic tank, is cleaned out every six weeks, or oftener, that the Cameron patent is thereby evaded. This idea,

while far from true, had its origin in a misunderstanding of a remark by the Court that the testimony showed that six weeks may be required to establish complete equilibrium in fresh sewage.

The Court of Appeals in this case had before it an instance in which the infringement had utilized the patented process at its maximum efficiency: the Saratoga tanks had not required cleaning for years and the septic equilibrium was perfect. The contrast between this condition and anything in the prior art was so extreme and conclusive that the Court was not obliged to carry its express definitions on to more exact but none the less substantial and definitive characteristics of the patentees' invention.

The actual invention is obviously not a mere matter of the number of weeks that sewage flow may be allowed to continue through a tank; but it is the providing of conditions that will establish, whether in days or weeks, a pool of organic solvent-medium so secluded and guarded from disturbance that organic solids will not pass through it and be discharged without being dissolved, the internal current and the outflow being so controlled that the effluent is free of organic solids, carrying away the anaerobic wastes without destroying the anaerobic menstruum. (The aerating and filtering steps of course succeed this.) This is the clear intent of both the Court's decision and the face of the patent, and was what the patentees first taught the art.

The new concept was: the secluded pool of anaerobic menstruum, guarded from agitation and aeration, fed by intaken organic matters, and scavenged of its own wastes by its quiescent outflow. The haphazard putrefaction occurring sporadically in the contents of sewage mains and in the old settling tanks and cesspools is as remote from this controlled organization as is the shaking of dice from the operation of a calculating machine. The condition and character of the sewage delivered into the tank may hasten or defer the organizing of this working machine; but its organization, and not the mere count of the days required, is the material thing. The Court found, as a fact, that this process was used at Saratoga and was not used in the prior art; but the Court's remark as to the six weeks that the proofs showed may be needed to establish septic equilibrium in fresh sewage had only the intent of confirming the fact that the prior art never contemplated a process that was inherently capable of indefinite continuance; and the fact remains that the prior art never actually organized such a machine either in days or in weeks, and the organizing of it in even less than six weeks would still leave it the same new thing in the art. Also, after being organized the machine may be misused by being overloaded, so that its efficiency is reduced and ultimately destroyed; but its efficiency will have continued until the anaerobic menstruum has been either crowded out by the accumulating excess solids, or flooded out by the excess liquids.

Like any other patented process or thing, it may be imperfectly used and yet yield substantial advantage to the infringer; and his acts have a very different aspect, equitably, from any mere fortuitous approximation to such results in the prior art. In Saratoga's case the process had made possible a result so extremely remote from anything attainable in the prior art, that it sufficed for the Court to point out this extreme divergence.

The chamber in the Imhoff tank that is termed the "decomposing room" is a septic tank embodying the essence of the process for which Cameron gave to the sewage-disposal art the new term of "septic"—the process consisting in the secluded pool of bacterial solvent-medium, guarded from agitation and aeration, fed by intaken organic matters, and scavenged of its waste products by quiescent outflow. The so-called "sedimentation chamber" of Imhoff, crossing the upper part of his "decomposing room" is simply the channel from which that heavier part of the sewage especially requiring septic treatment quiescently flows down into the "decomposing room" of the septic tank, such inflow of heavier matter constantly displacing a like proportion of the liquid contents that quiescently flows up from the "decomposing room" into the same channel, thus maintaining the quiescent intake of organic matter and outflow of liquid, with the pool of bacterial solvent constantly preserved. The occasional withdrawal of fully reduced sludge from the bottom of the "decomposing room" is likewise a quiescent outflow and is simply a modified form of the withdrawal of sludge residuum that is commonly practiced in the septic process and in fact provided for in the Cameron patent.

CAMERON SEPTIC TANK COMPANY,

H. D. Wylie,
General Manager.

PARK ROADS.

Kind of Traffic—Planning Roads and Boulevards—City Parks—Rural Parks—Bituminous Pavements for Park Roads.

Extracts from paper by LINN WHITE, Chief Engineer, South Park Commissioners, Chicago, Ill., before the American Road Congress.

Park roads in this discussion are taken to include all public routes of travel on which the character of traffic is restricted, and are thus distinguished from streets and highways on which traffic of all kinds moves unrestricted. The term includes what are in many of our cities called boulevards, which may be parts of a system of streets through populous districts of a city or may partake of the nature of suburban highways. Usually what is termed heavy traffic, or teaming traffic, is excluded from roads of the character under discussion. This establishes a class of fast moving, generally light weight vehicles traveling over boulevards and park roads and limits the character of driveway surfaces to those best adapted to this kind of traffic. The surface of such roads must be smooth but not slippery, firm but not hard, stable but with a measure of resiliency, free from dust, easily cleaned and without unpleasant glare in sunlight. Also the roadway must be of ample width, the crown not too high, drainage carefully provided and catch basins or sewer inlets at frequent intervals. Some kind of bituminous pavement meets these requirements as to surface better than any other class of pavement.

On a boulevard, with buildings on either side, the lines and setting should be formal. The bordering trees should be in rows evenly spaced, there should be a substantial stone or concrete curb, the parkways on either side of regular width, and, in keeping with the general formality of the scheme, the alignment of the roadway should be straight unless local conditions require curves.

On a road through a park formality should generally be dispensed with. Grades should be laid to cling close to the surface of the ground, the alignment should be with easy, natural curvature, not forced or meaningless but leading with fair directness to the objective point. If the contour of the land does not suggest or compel reasonable curvature, let the road wind around clumps of trees, as if avoiding the necessity of cutting them out, and mask the turns with clumps of shrubbery, as much as may be consistent with safe driving, so there may be some variety and surprise in the landscape beyond. These matters may be encroaching somewhat upon the profession of landscape architecture, but an engineer to be entrusted with the planning or laying out of park roads must be somewhat of a landscape architect, or, to put it more accurately, he must be a landscape engineer.

In park roads, using the term in its strict meaning, formal curbs should be dispensed with, catch basins should be generally of the sewer inlet type without settling basins, and castings for sewer inlet covers should be combination gutter grates with side inlets. This style of sewer casting is less conspicuous than the usual side inlet type with solid iron cover, the grating in the gutter may be lifted to give access to the basin and the side inlet provides an overflow in case the grating is choked with leaves. The lamp posts should be less obtrusive, less in evidence, than is permissible on boulevards. Their frequency will be according to necessity in each case, but generally lighting is not required to be as thorough as on boulevards.

A character and distinction is given the park road by judicious use of statuary and vases for flowers, as well as the proximity of walls, flights of steps and buildings.

These are the human touches to the roadside which give a pleasant sense of use and contrast with nature. Other roads that as in the old riddle "go up hill and down hill yet always stand still" may satisfy the necessities only of transportation, but the park road should suggest time to enjoy the surroundings. A seat well placed in a shady nook or a bridge over a quiet stretch of water is an invitation to linger a while which is the proper function of a park roadside. Too many roadside statues, vases, ballustrades, etc., suggest the architecture of formal gardening rather than the restrained naturalness proper in a park landscape.

The latter two or three sentences are particularly applicable to what may be termed city parks with roads properly belonging to such semi-formal parks. There is another class of parks, often established near cities, belonging more to the free, open country, where the roads must be simply improved to be in keeping with the rural character of other improvements. The character of road surface, drainage, lighting, contour, grades, etc., should be worked out by different standards. They should cost less to construct, carry less traffic and be maintained at less expense. Broken stone or gravel are suitable materials for such road surfaces if properly bonded, preserved and made dustless by the application of bitumen according to penetration methods or under some circumstances merely oiled to restrain the dust.

There are, therefore, in the light of what has been said, three grades of park roads which may be classified as boulevards, city park roads and suburban park roads. Not every town or city interested in park development may recognize this exact division but the natural tendency is towards it.

In the improvement of boulevards and city park roads the amount as well as character of traffic should determine the kind of paving surface. The words commonly used to describe traffic are "light" and "heavy," but the terms are ambiguous as *light* may mean light weight vehicles or few in number; *heavy* may mean heavily loaded or great in numbers. The use of some such term as "intense" should better describe a condition of traffic that exists on many park roads than either "light" or "heavy," meaning a great many comparatively light weight but rapidly moving vehicles. Such a condition is found on the Chicago boulevards and it is rapidly growing more intense.

As stated before, a bituminous pavement of some type has more of the desirable qualities for a boulevard or park road pavement, but unless properly constructed in all respects may prove a disappointment under intense traffic. If the pavement is lacking in lateral stability under high temperature or is not properly supported by the base, the effect of the rapidly moving vehicles is to form parallel grooves or ruts which when once started rapidly grow worse because each following vehicle tracks in the same rut the preceding one started. This effect was first noticed in Chicago in 1908 on a pavement on Grand boulevard constructed by the penetration method with a California liquid asphalt. An attempt to stiffen it up by rolling in screenings, stone chips and finally coarser stone was unsuccessful and it had to be torn up. Bituminous pavement laid on Michigan avenue and South Park avenue in 1907 and 1908 began to show ruts in the summer of 1909 and grew worse each succeeding season, in spite of frequent rollings and forcing into the surface broken stone of various sizes, so that in the summer of 1911 it was at times almost impassable and in 1912 entirely relaid. The same effect was seen to a somewhat less extent in the summer of 1911 and 1912 in sheet asphalt pavements on Michigan avenue and Jackson boulevard, where the pavement was at least eight years

old. The only remedy found, as in the case of the bitulithic, was to resurface the pavement where affected.

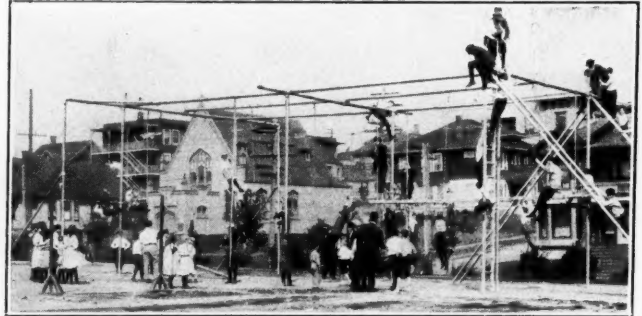
Most of the pavement laid on the boulevards and park roads of Chicago during the last three or four years is what has been termed asphaltic concrete. It is a pavement that has become fairly well known in some sections of the country by frequent descriptions and because of its acknowledged success and low cost. It is, as its name implies, similar to ordinary concrete in composition—a broken stone aggregate imbedded in a mortar composed of sand and asphaltic cement. The mortar is similar in composition and proportions to a sheet asphalt surface mixture. It should be made of graded sands, with or without the addition of dust, to make a well-filled and waterproof paving mixture. The proportions of broken stone in the mixture may be varied according to circumstances. When it forms a very considerable proportion of the mass, it aids in making a stable, non-shifting surface. Surer and better results, however, may be gotten by reducing the quantity and size of stone and depending mainly on the base for stability. The base, either of concrete or macadam, should be prepared with a coarse layer of broken stone on top, not completely filled with fine material, which may be considered as a *binder* course similar to that used under sheet asphalt surfaces. It, however, need not be coated with bitumen and should be reasonably coarse, and, to serve its purpose of key between wearing surface and base, should be partially imbedded in the base. This is best done on macadam by light rolling and on concrete by tamping, while, in both cases, the foundation is still soft.

SEATTLE'S PLAYGROUND FACILITIES.

By HARVEY W. GUETZLOE.

The playground feature of park development in Seattle, which, previous to 1909, had not been given particular attention, has shown remarkable progress since that time, with the result that Seattle now has more playgrounds and more outdoor recreation facilities than any city west of Chicago, regardless of size. Twenty-two sites, now owned by the city, comprise a total area of 102 acres, and have been acquired at a cost to the city of \$506,760.31. One additional site covering fifteen acres is now under condemnation.

Twelve of the playgrounds are equipped with steel gymnasium and other play apparatus, including ball fields, tennis courts, swings, teeters, wading pools, sand courts, etc., and are supervised during the summer months by both men and women supervisors. Six playgrounds are partially improved and in use as athletic fields, with no supervision or equipment, and four are at the

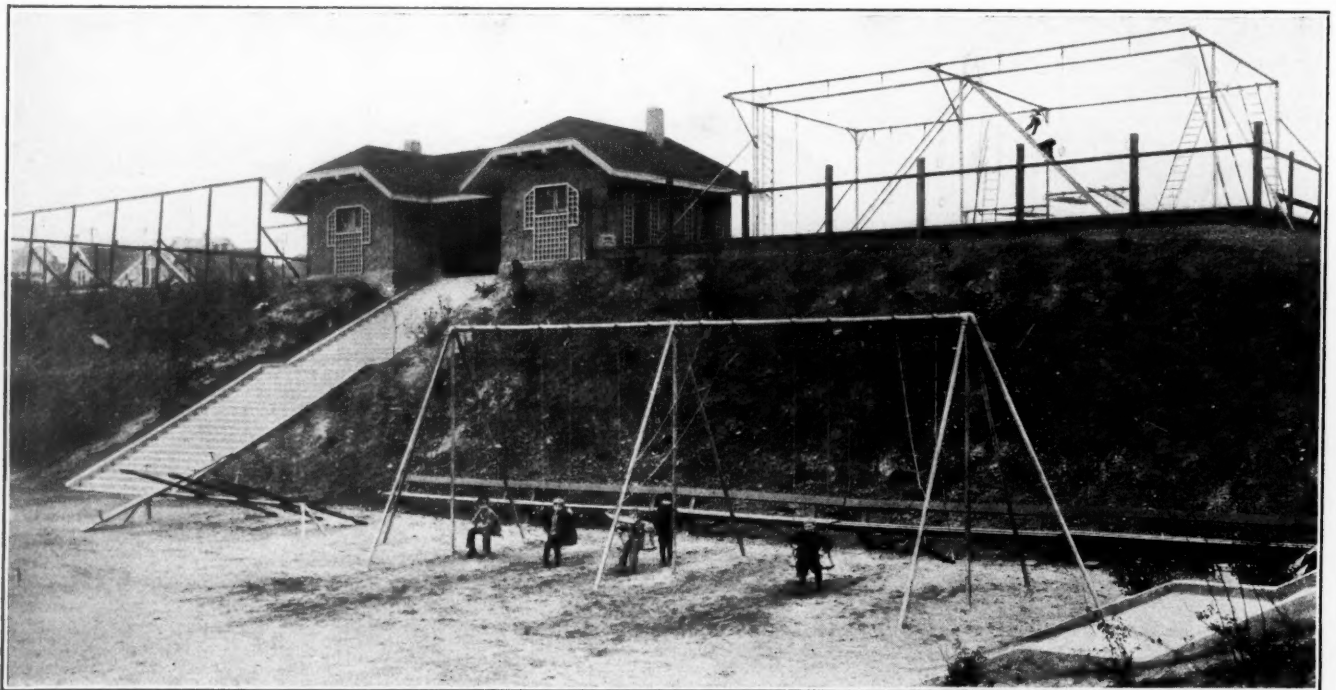


LINCOLN PLAYGROUND.

present time unimproved. Field houses or recreation buildings, used as social centers, and indoor gymnasiums have been constructed on four of the larger grounds. The total cost of playground improvements has been \$222,310.59, and the total playgrounds investment, with land and improvements, has cost the city \$729,070.90. During the year 1911 alone, approximately \$87,000 was expended by the board of park commissioners for playground maintenance and improvement.

The Lincoln, Collins, Rogers, Miller, Hiawatha, Ballard, B. F. Day, Ross, University, Queen Anne, South Park and Beacon Hill Playfields are equipped with the most modern recreation facilities. Steel gymnasium apparatus is provided separately for boys and girls, with all the various devices of aerial rings, ladders, climbing poles and swings to delight the children, who are carefully watched and guided by competent instructors and supervisors.

A record of the attendance at the supervised playgrounds during 1911 showed that 843,002 boys and girls availed themselves of the recreational facilities during the year.



APPARATUS AND SHELTER HOUSE, SEATTLE PLAYGROUND.

NEWS OF THE MUNICIPALITIES

Current Subjects of General Interest Under Consideration by City Councils and Department Heads—Streets, Water Works, Lighting and Sanitary Matters—Fire and Police Items—Government and Finance.

ROADS AND PAVEMENTS

Rock Crusher Installed.

Mt. Angel, Ore.—Marion County has recently installed a rock-crusher one mile south of Mt. Angel, one of the best-equipped machines in the state. The crusher is large and is driven by a 50-horsepower motor. About 30 men and 20 teams are employed, and the work will not cease until the weather interferes.

Street Work Started.

Richmond, Va.—Under the direction of Assistant City Engineer D. F. LaPrade, work has been started on correcting the grade on Bainbridge street, between Tenth and Eleventh. The street has been plowed up and dragged. The lower end will be raised several inches and the entrance to engine house, No. 13, will be made to conform with the street grade. Granite blocks will be laid before the end of the week.

Praises Allegheny County's Good Roads.

Nashville, Tenn.—In the course of a three-months' automobile pleasure trip, W. E. Jordan, a member of the Board of Trade Builders' Exchange, covered 3,857 miles, passing through the cities of Louisville, Cincinnati, Dayton, Toledo, Detroit, Mackinac, Buffalo, Rochester, Syracuse, New Albany, New York and Atlantic City. Mr. Jordan, in speaking of his trip said: "The best roads on the trip were found in New York and Pennsylvania and I would like to state just here that too much praise can not be said for the Warrenton roads in Allegheny County, Pa., of which Pittsburgh is the county seat. In passing through this county, it was a pleasure to notice how well these roads were built. At one point I coasted my car for a distance of $5\frac{1}{8}$ miles, which in itself was a remarkable feat."

Convicts Build Concrete Highway.

Raleigh, N. C.—An illustration is given of the concrete highway recently finished from Raleigh north to the



STRETCH OF COMPLETED HIGHWAY.

Country Club. This highway was built entirely by convict labor and is the first concrete highway in North Carolina.

The concrete road is twenty feet wide and six inches thick; upon this very solid and extra heavy concrete base is laid a top dressing of tar and a three-quarter inch layer of finely crushed granite. The cost of the road approximates \$10,000 a mile.

Central Highway of North Carolina, most of which is

now complete, extends from the Tennessee line, in Haywood county, through nineteen counties to the ocean at Morehead City. At Asheville it will be met by the Crest of the Blue Ridge Highway, which has an elevation of from 2,250 to 6,000 feet above sea level; at Salisbury it intersects the National Automobile Highway from New



HIGHWAY THROUGH FIELD OF YOUNG COTTON.

York, and at Raleigh intersects the Capital Highway, between Washington, D. C., and Florida, passing through the cities of Richmond, Raleigh and Columbia; this road is also a part of the Quebec-Miami highway. The information and views were furnished through the courtesy of Fred. A. Olds, Secretary of the Chamber of Commerce.

Want Million and Half for Grade Crossings.

New York, N. Y.—The Public Service Commission for the First District has just sent to the State Comptroller at Albany a request for an appropriation for the year 1913 of \$1,500,000 to be used in the elimination of grade crossings on the railroads within the limits of Greater New York. Under the law the cost for such elimination is borne one-half by the railroad company, one-quarter by the city and one-quarter by the state, but no proceedings can be taken by the Public Service Commission toward elimination until the state shall have appropriated its quota.

City Makes Money on Paving.

Spokane, Wash.—In a final report to the city council on the paving of Division street and Main avenue by day labor, made necessary by the grade change caused by the coming of the Milwaukee railroad, the department of public works shows that the city made a profit of \$1,990.30—practically 10 per cent. The entire cost of the work must be borne by the Milwaukee railroad, which owns practically all the abutting property affected by the work and which agreed under its franchise to do so. The work cost the city \$18,093.25. The railroad will pay the city \$20,073.55. This report covers the paving only. The report on the sidewalk, showing even a greater profit, is yet to come.

The work was taken over by the city to do by day labor after the Milwaukee railroad reported that it could get no contractor to take it and have it finished this fall. In order to get the streets paved and open for traffic as soon as possible and in consideration that the road was the principal abutting property owner and merited consideration on that score, the city agreed to use its outfit and crews on the job. The road had previously done all the filling and grading and the sidewalks and paving only remained to do.

Jersey's First Concrete Road.

Phillipsburg, N. J.—One of the first country roads of concrete ever built in the State of New Jersey is now in process of construction on Morris turnpike, one mile west of New Village and about eight miles east of Phillipsburg. The work will continue to about November 16. The road is being built by the State, under the supervision of J. R. Thatcher, director of the Board of Freeholders, Warren County.

Begin Road Building; 58-Mile Contract.

Orange, Tex.—Actual dirt moving on a 58-mile contract of road building in Orange county has been started by Ray McDonald, of Austin. From 75 to 100 men will be employed in the work of road building that is to be carried on by four crews directed by Mr. McDonald and his assistants. Grading will be done on the upper and lower Orange and Beaumont roads, the Mauriceville road and the Newton county road first, the work to start as near town as possible and move in an opposite direction from the city. An oil-engine will be used to operate one of the graders while teams will be used to operate the rest of the outfits. Mr. McDonald's equipments are said to be best and most up-to-date in the state.

Brick Paving for Allegan's Streets.

Allegan, Mich.—The paving of local business streets is being rapidly pushed toward completion. When the present work is finished, the city will boast of over one mile of brick pavement, a rather unusual record for a city of 4,000 inhabitants. The work was begun a year ago under the firm of Anderson & Carpenter, of Grand Rapids. Beside streets paved with brick the city has electric lights, and is supplied with gas.

Workhouse Inmates Building New Boulevard.

Nashville, Tenn.—Splendid progress in the construction of the proposed 80-foot boulevard from Shelby park to the Gallatin turnpike, above Inglewood, is being made, according to George W. Hobson, superintendent of the workhouse gang, who is superintending the job, and within five or six months, he says, the work should be complete. The object of the undertaking is that extensions to the boulevard shall be built by the park commission across Shelby park and thence by the city to the Sparkman street bridge. Over 100 of the workhouse hands are now engaged on this work and are located near Maxwell's lane. About three miles have been macadamized and at present the grading is about three-fourths miles ahead of the macadam. The boulevard, when finished, will have two twenty-foot driveways with a 20-foot grass plot in the center and a ten-foot walk on either side.

Offers Free Improvement of Road.

Spokane, Wash.—In order to promote the construction of arterial street connections between the Spokane business center and the good roads leading up to the city limits, the Finch Investment company has offered to pave the thoroughfare leading from Thirteenth avenue and A street to the Sunset boulevard. The company offers to make this improvement at the cost of thousands of dollars if the city will make a corresponding improvement upon the streets leading from Thirteenth and A to the business center of the city.

Refuses to Pave Alleys Behind State Property.

Topeka, Kan.—The city of Topeka no more will risk spending money for paving and carrying the state's account for their share of the payment. The Board of City Commissioners has decided that the petitions for the paving of the alleys between Ninth and Eleventh streets and Kansas avenue and Jackson street would never be allowed until the state legislature set aside an appropriation for the state's assessment on the paving. Twenty-five years ago the state was assessed \$32,000 for paving around the state house grounds. The bill never was paid. Today the principal and interest amounts to \$60,000—and the taxpayers are holding the sack. The first chance to take advantage of their lesson has appeared and the City Commissioners remembered the quivering arrow that has been sticking in the city's skin for the last 25 years. The

petition came in for the paving of the alleys behind the Memorial building and the state heating plant. The petition was refused and will be held up until the meeting of the legislature this winter. If the state appropriate the assessment at that time the petition will be granted. Otherwise the alleys will remain in their present condition.

Construct State Highway.

Lowell, Mass.—Only a month has elapsed since J. Wagenback & Son, contractors of Lawrence undertook the work of the new highway between Lowell and Methuen by way of First street, and a great change is now noticeable, as nearly two miles of the road have been dug up. The work is progressing rapidly and the contractors in charge hope to have the entire road finished and opened to traffic by July 1. About 60 men are employed on the job and the work is being conducted under the supervision of Engineer Coburn of Brookline, a state highway man.

The workmen are up against a rather embarrassing proposition in some parts of the road, as the water flowing from the highlands is flooding the road, while in other sections small springs are encountered and in order to rid the road of the water a drainage system is being conducted leading into the river. The result of this is that a number of men are forced to work with rubber boots on as there are plenty of pools of water. The road all along from First street to the Essex county line is between 27 and 30 feet wide and the digging is being brought down to about 21 inches below the car tracks. There are two sections of the road where a stone wall will have to be erected, one about 100 yards on the city side of the car shed, and the other about 300 yards long on the other side of the shed. In those two places the hills, which are very high, are cut square to the road and in order to retain the dirt and trees, walls will be constructed. The contractors on the road are getting ready to install a stone-crusher in order to crush the needed gravel for the construction of the road, this work to be done in the course of the winter. As soon as the digging up to Essex county line is finished the stone foundation will be set in and the macadamizing will be started. There is one stretch of the road above Belle Grove, extending about a half mile, which is all graded and that part, too, will be macadamized.

SEWERAGE AND SANITATION

Sewers Fail to Carry Off Surface Water.

Jersey City, N. J.—The picture illustrates conditions on a street in Jersey City after a heavy rain storm. Owing to the imperfect carrying away of the water by the sewers hundreds of cellars were flooded, streets were impassible and thousands of dollars' worth of property destroyed as a result. Calls for fire engines to preserve property



Courtesy Jersey City Journal.
CITY STREET AFTER RAIN STORM.

by preventing the complete flooding of large plants stocked with valuable property came from all parts of the city. Chief Engineer Charles A. Van Keuren made this statement regarding the flooded cellars and other damage caused by the storm:

"The flooded condition of the city is due in a very large degree to the fact that the sewers needed cleaning. Many of them had been partially choked up for some time. We had no money with which to pay for the thorough cleaning of the sewers. We have not had enough men to do the work as it should have been done."

Work On Densmore Creek Sewer Overflow.

Rochester, N. Y.—Work on Densmore Creek sewer overflow will be completed early this winter, according to a statement made by City Engineer Edwin A. Fisher. The work is now forging ahead rapidly. The claims for the channel were all settled in 1901, and the city took over the entire right of way. A concrete channel was constructed 16 feet wide and six feet high eastward from Waring road about 2,000 feet. The portion between the Waring road and the east side trunk sewer in the Municipal Hospital grounds is carried through a culvert about 15 feet wide. The cost of the overflow will be about \$50,000, and it will take about 500 feet a second.

Adopt Anti-Roller Towel Ordinance.

Birmingham, Ala.—The roller towel, a dispenser of germs, and the bane of the traveling man's existence in many cases, is doomed in Birmingham. The commissioners have passed an ordinance introduced by Judge A. O. Lane making it a severe penalty to have roller towels in Birmingham. The ordinance was called at the meeting of the commission and was heartily approved and adopted. The ordinance will be advertised by Secretary Ryall and will go into effect soon thereafter. In the city of Birmingham the roller towel will be displaced by sanitary paper towels or individual napkins.

WATER SUPPLY

Water Supply Now Adequate.

Naugatuck, Conn.—The Naugatuck Water Co. will now abandon the pumping station at Beacon Hill brook, and will rely upon the reservoirs to keep the boro supplied with water. City Engineer George C. Ham, one of the directors of the water company, stated that there had been about an inch of rainfall and he thought that the water company would not use the pumping station any more. The station will be kept in first-class condition so that it can be put into instant use if the occasion should arise. Enough water is on hand to tide the boro over for some time and with the fall and winter storms a short time off, Naugatuck is safe.

San Angelo Wants Pure Water.

San Angelo, Tex.—A resolution requesting that steps be taken to give to San Angelo a purer water supply was passed at a recent meeting of the Young Men's Business Club in San Angelo. The club, through the resolution, asks for a filtering plant.

Superintendent Searches Days for Suspected Leak.

Spokane, Wash.—Superintendent Alexander Lindsay, of the city water department, and his crew of inspectors and repair men, for a week baffled in their efforts to discover what they believed to be a monstrous and record-breaking leak in the high pressure water system on the South Side, at last discovered the trouble. Superintendent Lindsay had been unable to keep the Lincoln Heights reservoir full, and the Lincoln Heights pumping station, which is normally able to keep the South Side standpipe full of water by running a maximum of seven hours a day for a week had to be kept in operation from 10 to 14 hours a day. Superintendent Lindsay estimated that there was at least a four to six-inch continuous leak somewhere on the high-pressure system. He started out with his crews to find it. The mains were trailed down for evidences of a leak, but no surface water along the route of the mains was found. Day after day the unusual drain continued, and finally, when all other means were exhausted, and the superintendent was about to start digging up the mains in

various districts to test the flow of water, in an attempt to locate the leak in that way, he chanced to go into Manito park and the leak was found.

It seems that the park board had opened a four-inch connection on a city main and started to fill the lake in Manito park by a pipe three blocks long. The four-inch flow had been allowed to continue night and day for a week, when it was ordered stopped by the superintendent. "The water the park management was using was metered and the city will get some return for it, but not sufficient to pay the cost of the extra pumping we had to do, because the park board buys water at reduced rates," said the superintendent. "I have no objection to the park board filling its lakes, but when such a big and continuous drain is put on the system it cripples us unless we know beforehand and can prepare for it. The park authorities have promised in future to let me know in advance and I can arrange to let them have the water at times when it will not interfere with the regular supply and demand on the high-pressure system."

Water Flow Increasing.

Salt Lake City, Utah.—According to report received from the city water tunnel in Emigration canyon, every day's work brings a larger flow. Already a supply of more than 300,000 gallons a day has been developed and increases as the tunnel is driven back. It is estimated by water department officials that by running two or more lateral tunnels from the end of the main bore, a flow of a million gallons per day or more could be developed. No change in the flow of the old city tunnel east and up the canyon from the new canyon has been discovered. This indicates that the new flow is from a new source.

New Water Main in Mohawk River.

Amsterdam, N. Y.—The Acme Construction Company of Herkimer, who have the contract for laying of a new water main across the Mohawk river, to supply the residents of the Fifth Ward, are pushing their work as rapidly as possible, in order to have it completed before cold weather sets in. Workmen are now engaged in digging a trench in the bed of the river in which to lay the new water main. The old line has been ripped up and the new main will be laid about four feet deeper so that the ice and water will not affect it in any way. The trench is being made by a large pile driver at a point opposite the property of the Chuctanunda Gas Light Company and just east of where the Chuctanunda creek empties into the river. On the completion of the digging of the trench, a trestle will be constructed along the route of the new line extending across the river. The iron pipe will be laid on this and caulked. It will be given a thorough test and then lowered into the river, after which it will be connected at either end with the water main extending down to the north side and to the south side of the river to the various streets in the Fifth Ward. After this it will be covered with dirt and crushed stone in order to prevent it being injured by ice or high water floods as in the case of the old one.

Reservoir Breaks in South Nashville.

Nashville, Tenn.—The wall of the east basin of the Nashville reservoir broke shortly after midnight on Nov. 5th the aperture being about 150 feet in width. Through this a stream of water six feet deep swept with great velocity. Eighth avenue, south, suffered the most damage. Here several houses were washed away and one or two of them were demolished. A few houses on Lynwood avenue were also damaged. There was no loss of life. The roar of the rushing waters awakened the residents of the flooded section and brought many spectators to the scene. The fire alarm was given and much excitement followed. Among the narrow escapes reported was that of T. M. Heffey, wife and five-months-old child. While still in bed, they were swept out of their home and down the street, where they caught the boughs of a tree and climbed to safety. The house was practically destroyed. The family of W. O. Arzinger also had a narrow escape, as their house was moved fifty yards from its foundations. Many houses were flooded, fences were demolished and a property loss

of probably \$10,000 entailed. The reservoir has a capacity of 52,000,000 gallons.

Parties who examined the reservoir wall after the break declared that it had slipped on its foundation. This foundation is laid on soft limestone and at the point where the wall had been washed away it was worn smooth as a floor, giving little or no hold to the immense blocks of stone of which the structure is built. The wall is thirty feet thick at the base and ten feet at the top and about thirty-three feet high. It was broken in two places, the first being only a small aperture of about ten feet which extended from the top to the bottom. The second breach is about one hundred feet wide. The broken parts which were left standing were swept several feet outward from the base, while the top is tilted in toward the basin, showing that it rested on its foundation none too securely. The jagged edges of the breach show huge limestone blocks that were broken in half by the terrific force of the water.

City's New Pump Given Trial.

Hancock, Mich.—Hancock's new pump, purchased some months ago from the Carroll Foundry Company, has been given its first trial. No water was run through the machine, but steam was turned into the cylinders and the machinery given a preliminary test. It is expected the pump will be in commission within a few days. Work is delayed for the present by lack of pipe ordered. When this is received the new pump will be put to work and the old one overhauled. The pump at present doing duty has worked unceasingly for the past twelve years or more and is in urgent need of repair. With the newly erected pump and the smaller auxiliary, Hancock will be removed from almost every possibility of a water shortage.

Pipe Line Laying Is Under Way.

Altoona, Pa.—Work has been started by the firm of S. S. Johnson & Bro., of Harrisburg, of constructing the 30-inch pipe line that will form a portion of the connection between Lake Altoona and the city. Whether it will be completed this fall depends upon the weather conditions. The officials of the department were very anxious to have the line completed this fall, as the work on the big basin has progressed sufficiently that a great volume of water can be stored in it during the ensuing winter for use next summer. This line will be laid for about a half mile below Lake Altoona, where it will be connected with the 24-inch main from the impounding dam. Then whenever the department draws from Lake Altoona the water will be turned off from the impounding dam. It is the intention of the department to construct the new line to the city, but the revenues do not warrant the expense this year. Later on it will be completed, making a line independent of the 24-inch line. At the present time there is an old pipe line that reaches from Lake Altoona to the city, but it is small and pretty well worn out. It was used before the impounding dam was constructed.

Clear Site for Filtration Plant.

Dallas, Tex.—Sixty men are at work and have been for two weeks in tearing down and removing the old boiler house of the Turtle Creek pumping station to make way for the filtration plant to be erected there. The demolition and removal have been about completed, and it is expected that excavation will begin. Approximately 11,000 cubic yards of earth will be removed for the installation of the filtration plant with its purification chambers and its filter beds. C. L. Morey is the engineer, representing James H. Fuertes, the designer, in the construction work. It is intended that the plant, with its daily capacity of about 20,000,000 gallons, will be ready for operation in May, 1913, at a cost of about \$202,000. In the excavation for the plant the site of the old boiler house will be used on the flat land just to the south of the Turtle Creek reservoir and almost directly west from the new Turtle Creek pumping station. It is expected that 100 men will be engaged in this excavation work. The greatest depth below the common level will be thirty feet, or some ten feet below the normal level of the water in Trinity River.

One of the first operations will be the laying of a 24-inch sewer line from the plant site to Turtle Creek to be used for the occasions when it shall be necessary to back flush the beds and to carry off the sediments into the creek.

Chief Engineer J. M. Bassett, of the waterworks, is aiding in the carrying out of the work. Under his direction the men are preparing the place for the installation of the plant. He will look after the securing of the necessary rock of various sizes to make the filter bed. The collecting of materials for the work had begun already. The bricks for the purification house, where the chemical handling will be done for the chemical laboratory and for the walls of the filter beds, have been ordered.

Navarre Water Plant Completed.

Navarre, O.—The new water works plant which has just been completed at the cost of \$25,000 will be given an official test when 100 pounds of pressure will be turned into the pipes and maintained for four hours. If no leaks are found in that time, the system will be accepted. The system was built by John Sorenson, of Ravenna, and will be tested by L. E. Chapin, of Canton, town engineer. The work was done at the direction of the Navarre board of affairs. Clarence Brindle, a young miner, has been engaged as engineer for the system. The lines for the use of private consumers will not be finished until next spring, but the fire hydrants are now ready for operation. Power for the system will be supplied by the Massillon Electric and Gas Company, and will be furnished through an electric motor.

Fear for New York Water.

White Plains, N. Y.—The City of New York, through its Water Supply Department, made vigorous protest before State Commissioner of Health Eugene H. Porter against the proposed erection by Westchester County of a tuberculosis hospital at Croton Lake in the northern part of the county. A petition signed by 268 residents of Croton Lake and Yorktown and a petition by the town Board of Health opposing the project were also submitted. The City of New York contends that the hospital at Croton Lake will be a menace to the water supply of Manhattan, because two streams which flow through the Griffen farm, which is the proposed site, empty into Croton Lake, not far from the intake of the new Catskill Aqueduct. Theodore Coffin, Sanitary Engineer for the City of New York, and T. C. Colyer, assistant engineer in charge of the water shed and aqueducts, testified for the opposition. Andrew J. Provost, a sanitary engineer, and Dr. Herbert D. Pease, a bacteriologist, testified in favor of the site.

Blame Water Supply.

North Tonawanda, N. Y.—Health Officer T. P. C. Barnard states that the closing of the Motor Island channel is the cause of the increased pollution of the waters which Lockport, Tonawanda, North Tonawanda and Niagara Falls are pumping. The typhoid fever record of this city would indicate that the local water supply has gradually been getting worse. The report shows that in 1907 there were 35 cases of typhoid fever and the next year 34. In 1909, the year before the filling in of the channel was started, the number of cases was 21. In 1910 the channel began to be blocked and the number of typhoid fever cases increased to 41. In 1911 the number increased to 73 and during the first six months of this year there were 39 cases.

Tributary Streams Will Be Patrolled.

Tacoma, Wash.—Steps to insure the purity of the water in Green river which will soon be turned into the city's mains will be taken soon, following the return of City Health Officer Edwin Janes from the East. The land through which flow the various streams tributary to Green river, and along Green river to the city's headworks, if purchased outright, would cost in the neighborhood of \$100,000, it is estimated. Mayor W. W. Seymour is of the opinion that this expense will not be necessary and that a

patrol maintained along the upper regions of the river and tributary creeks would be sufficient to keep the water from being polluted. There are 1,000 men employed in logging camps situated along the upper Green river, and steps will have to be taken to prevent contamination from water entering the stream from these sources, it is said. Engineer J. C. Manley, of the water system, said that the system Seattle uses to protect its water from pollution might be available in Tacoma. There a patrol is kept up all along the water shed, and fishing and hunting is forbidden and campers are not allowed to settle in the vicinity.

STREET LIGHTING AND POWER

Extend Ornamental Lighting On Pico Street.

Los Angeles, Cal.—By the adoption of an ordinance for the ornamental lighting of Pico from Vermont to Crenshaw boulevard, the council has made Pico street the longest lighted street in Los Angeles. Pico has been ornamentally lighted from Main to Vermont for about two years but the extension of the system to Crenshaw carries the system very near the western city limits. The city will pay \$1,450 toward the cost of lighting this Pico street extension. This is about one-eighth the total cost of the light for the year and represents the cost of lighting the street by the present method of arcs. The property owners will pay for the ornamental posts and seven-eighths of the lighting cost.

Chimney of Hebron Plant Sixty Feet High.

Hebron, N. D.—The tall smoke stack of the Hebron Light and Power plant complete is now sixty feet high, and, like the building proper, is built of the famous Hebron pressed brick. During the past week underground wires have been laid for street lights which are to make Hebron's White Way, as there are to be five handsome iron posts, one on each of four street corners and one in front of the Merchants' State Bank building. Each one of these posts will be surmounted by a cluster of three intense lights. It is now expected that the electric service will begin in about two more weeks.

Complete Electric Light System.

Garretson, S. D.—The new electric light system in Garretson has been completed and will be placed in operation within a few days.

City Lighting Plant Scene of Attack.

Yates Center, Kan.—The men who seized, bound and gagged James O'Donnell, engineer of the electric light plant, one night last week, and turned off the city lights with the evident intention of looting the town, returned a few nights afterwards and again attempted to seize the engineer. The men were driven away by guards, and blood hounds were used to trail them. The trail led to the railway yards, but ended there. The attacks on the light plant have become a town mystery. There could be no motive save robbery. The residents say there is no trouble of any kind over the light.

Whole City Dark for Ten Minutes.

Schenectady, N. Y.—When a high-tension cable burned out recently about 7.30 o'clock in the evening the whole city was plunged into darkness and all trolley lines were tied up for ten minutes before the trouble could be remedied at the General Electric Works, where the cable was burned. This was the second electrical trouble for the day as the power was off for some time on one circuit, caused by the burning of a pole at South Centre and Smith streets late in the afternoon. The trouble was quickly remedied and was in reality a repetition of the same difficulty that had occurred the night before. The circuit put out of business at South Centre and Smith streets involved but a limited district, which included feed lines running from South Centre and Smith streets. This trouble was caused by the burning out of a lightning arrester which set fire to the pole. The Schenectady Illu-

minating Company's emergency was called and made the necessary repairs as speedily as possible. Superintendent Van Dyke said that no more trouble was expected and everything should be working all right now.

The next to the last of the Magnetite lighting circuits has been installed and the lights turned on for the first time. This circuit covers alternate lights on State street all the way up, that territory beyond Brandywine avenue to the north of State street and all of Albany street. The last circuit will complete the alternate lights on these streets, and will be installed shortly.

Oroville Secures Lower Light Rates.

Oroville, Cal.—The demand of the trustees for lower electric light rates for Oroville has resulted in the Oro Electric Corporation granting a lower schedule effective Jan. 1. The new schedule will be on the basis of meter measurements with a minimum charge of \$1 per month per meter. The company is now charging a meter rate of 12 cents gross, per kilowatt hour, with a discount of 16½ per cent. on a regular contract and a discount of 33½ per cent. on a five-years' contract. Under the new rates a discount of 10 per cent. will be allowed on all bills on or before the 10th of the month. The company has signified its intention of abolishing all flat rates, which may still be in effect on May 1, 1913, in order that the new rate may be applicable without discrimination.

To Remove Light and Trolley Poles.

Philadelphia, Pa.—An effort will be made in Philadelphia to provide funds for the removal of all city poles carrying electric wires within the near future. For this purpose an appropriation of \$80,000 will be asked for next year and a policy adopted of putting all extensions of the present fire and police telegraph system underground. The administration is also considering the advisability of preventing the erection of additional poles by corporations and requiring that those now standing be removed. In 1882 an ordinance was passed requiring all corporations to remove their poles on or before 1886. The corporations paid no attention to the ordinance until 1885, when they had a resolution passed by councils instructing the electrical bureau to suspend the enforcement of the ordinance "for the present." No action has been taken since by councils in reference to poles.

Give City Free Electric Sign.

Marshalltown, Ia.—An immense sign, with the words made of electric lights, giving friendly greetings to strangers and, perhaps, at the same time containing a boost for the city, will be flung across South Third avenue in the depot district in a few months. Bearing some such a slogan as "Marshalltown for Me" or "Welcome to Marshalltown," it will be placed as to not only be the first thing to catch the eye of the incomer, but also to light the vicinity over which it hangs. Such a sign is to be given to the city by the Iowa Railway and Light Company, successors to Jones & Hovey, which will maintain it free of charge. The corporation is ready to order the sign and hang it as soon as the Marshalltown Club determines what words of greeting or boosting phrase it shall bear.

Celebrate Lighting of Incandescent Lights.

Mitchell, S. D.—The public improvements which have been made in Mitchell this summer were formally opened to the public in a big demonstration of the approval of the people, when the concrete paved street and the 300 cluster incandescent lights were utilized for lighting the main thoroughfare. At 8 o'clock all the steam whistles in the city blew for fifteen minutes, and more than 200 automobiles appeared on the brilliantly lighted street and made a parade through the paved street section. This extends from the Milwaukee to the Omaha depot, a distance of eight blocks. This improvement represents an expenditure of more than \$50,000, and gives this city one of the most attractive streets in the state. Mayor Hitchcock issued a proclamation for turning on the lights and

using the street for the parade, which was witnessed by a crowd of over 3,000 people, who lined the street for several blocks. Hereafter the street will be lighted with the cluster lights and the arc lights, which have done service for so many years, will be discarded. The concrete paving gives excellent satisfaction, and the whole is an improvement which is well worth the money expended.

Chisholm Has Better Lights.

Chisholm, Minn.—Village Engineer Lang has been busy changing the Tungsten lights used in the White Way lighting system. The forty-watt lights that have been in use in the past have been substituted by a new up-to-date Tungsten light of 100-watt power. This, it is figured, will increase the light two or three-fold and will have a very noticeable effect upon the street. The idea was figured out by the village council, it being deemed advisable, however, to withhold the installation of them until late in the fall when the evenings began to lengthen. The custom of turning out all but the top light at 11 o'clock will be continued, the full lights being used from darkness until that time. The White Way system is wired for 208 volts and good results are obtained from an eight post to the block system such as Chisholm has. The White Way was put into use about two years ago and immediately following the turning on of the lights a terrific hailstorm not only ruined nearly every globe, but destroyed the Tungstens as well. The effect of the storm was so severe that the lights were not turned on until new globes and lights could be secured.

Trying Out a Time Switch.

Los Angeles, Cal.—A new time switch system, manufactured by the Williams company, of New York, is being tested out by Superintendent of Construction Frank Dix, of the municipal lighting plant, and if it works on the downtown ornamental lighting scheme, one of the biggest problems in the extension of this character of lighting throughout the residence districts will have been solved. The switch is controlled by an alarm clock arrangement that is set so as to throw on the entire circuit at say 5 o'clock in the evening, then switch off the four bottom lights at 11 o'clock and the top light on each post at 5 o'clock in the morning. The clocks are eight-day affairs, needing human attention but once a week. These devices with the complicated scheme admitting of the intermediate stop at 11 o'clock will cost about \$15 apiece and twelve of them will be installed on Calhoun street. If they work successfully there they will be placed all over the downtown district, supplanting the hand switches now in use. The simpler time switch that will do for the single lamp standards proposed for the residence districts, can be bought for \$5 apiece since there need be no provision for shutting off a portion of the lamps during the course of the night. The time switch is not exactly a new wrinkle, as the Williams company has been manufacturing the device for several years and it has proved satisfactory in a number of cities, according to the owners. It will not only avert the necessity of having policemen or watchmen go about the city switching the lights off, but it also will insure a more uniform load on the ornamental lines. The first one installed was placed between the Elektron and Aldine buildings, in a fire alley, to control the block of lights on Berry street, from Barr to Clinton.

FIRE AND POLICE

Will Establish Classes for Firemen.

Cleveland, O.—Classes for firemen will be held in the various fire houses of Cleveland, O. The teacher will be Henry Weinstein, a Case school student, who is interested in the life and activities of firemen. Chief Wallace is in thorough sympathy with the plan, and the course will consist of instruction in arithmetic, grammar, English literature, besides electric subjects. The teaching may be given for a two-hour period twice a week in stations where an average attendance of eight men can be secured, and four times a week where one of 15 men can be guaranteed. One great benefit will result to the men—these classes will fit them the better for the civil service competitive examinations in the department and outside.

City Engineer Reports on High-Pressure Pipes.

San Francisco, Cal.—City Engineer O'Shaughnessy has reported to the Board of Public Works that fifty-eight miles of pipe of the auxiliary system for fire protection completed and in service, together with the Second street pumping station and the Ashbury Heights tank, and recommended that all the completed parts be turned over to the Fire Department. The distributing pipes had to be kept in repair, he said, and it was incumbent on the Fire Department to maintain them in a state of efficiency.

Fire Chief Tests New Equipment.

Portsmouth, Va.—The new relief valves and shut-off nozzles recently added to equipment of the Independent Engine Company's engine were tested by Chief Walker, and at the conclusion of the tests the chief said the new equipment worked perfectly. With the new nozzles it will be possible for the hosemen to cut off the stream at the end of the line of pipe instead of having to send word to the engine to cut off the water. This will save much time and will permit the pipemen to use their lines of hose to much better advantage in carrying them into buildings. Chief Walker said that all of the steamers would be tested with the new equipment when it has been received.

Safer Fire Alarm Station Proposed.

San Francisco, Cal.—City Engineer O'Shaughnessy has reported to the Board of Works that the cost of a new building and equipment for the fire alarm and police signal system is estimated at \$670,000. In case Jefferson Square is not used for the building, the cost of a suitable lot will be \$80,000 additional. It is proposed to construct a fireproof building, isolated as far as possible, for the sole purpose of housing the switchboard and appurtenances of the fire alarm system. The heating plant and a gas engine and dynamo for charging the batteries will be installed in two small buildings nearby to eliminate the necessity of introducing any combustible material in the main building. It is desirable, the City Engineer says, that the central fire-alarm station be isolated in Jefferson square on account of safety economic construction. It is also proposed to mount all of the fire-alarm boxes in the underground conduit district on iron standards instead of following the old custom of attaching them to telephone poles. In the outlying districts it is intended to utilize the existing overhead construction as far as practicable, and construct only such new work as may be necessary to bring the present system to a satisfactory state of efficiency. The plan for the police system is to install a separate telephone and signal apparatus in each of the ten districts into which the city will be divided, and the various district headquarters as well as the central headquarters are to be connected by trunk circuits. In the underground district the police signal boxes will be mounted on iron standards and in the outlying districts they will be attached to telephone or telegraph poles.

New Police Signal System Installed.

Lynn, Mass.—The new eight-circuit Gamewell police signal system is being installed at police headquarters. The new outfit is double the size of the old four-circuit system, which will be removed from the building. The new one has many new features, making it much more efficient, besides saving the operator at police headquarters a great deal of time. One new attachment makes it possible for the operator at the police headquarters to make electric lights burn on the patrol boxes on any one or more circuits in the city in cases where patrolmen are required at times, other than when they ring in every hour. In case of an automobile or team being stolen on the street, the patrolmen in this manner can be made aware of the theft almost instantly if they happen to be in the vicinity of their patrol boxes, and if the lights are installed on the boxes it will probably result in many speedy captures of thieves in the course of a year. The old signal system was very much overworked, and with the growth of the city a larger outfit became necessary, as the efficiency of the department depends much upon the ability of headquarters to reach the patrolmen quickly in the suburbs.

MOTOR VEHICLES

Will Inspect Auto Engines in Service.

Johnstown, Pa.—At a recent meeting of the Board of Fire Commissioners it was decided to send Fire Chief Keller and Commissioner George Haberkorn to New York City within a short time to inspect a number of automobile pumping engines in actual service in that and surrounding cities. Dr. J. B. McAneny, another Commissioner, will be in New York about the same time and will accompany them on the inspection trip.

Fire Wagon Ready Soon.

Asbury Park, N. J.—Wesley Engine and Hose Company will place its automobile apparatus in service about December 1. The new apparatus is a combination chemical and hose wagon, and is being built by a local automobile manufacturer, at a cost of \$5,000.

Commissioners Try Motor Cars.

Atlantic City, N. J.—The City Commissioners have inspected a dozen different kinds of automobiles, sample cars submitted by the dozen bidders, who put in bids a week ago for the three runabouts and a supply wagon, which are to be shortly purchased. Each of the Commissioners took a ride in the new autos and during the afternoon Commissioner Bacharach, who is head of the supply purchasing department, had a trial trip in one of the White cars, which Richard G. Edwards is offering to furnish from City Hall to the Absecon water plant. Among the various cars exhibited to the Commissioners in front of City Hall, where a good-sized crowd gathered were those of the Bergdoll Taxicab Company, the White cars sent by Mr. Edwards, the Abbott-Detroit runabout, a supply wagon from the Otto Gas Engine Company, and cars of the Studebaker, Marion, the International Harvester and the Chase companies.

Brooklyn is First in Motor Equipment.

Brooklyn, N. Y.—The first fire engine company in Brooklyn to be completely equipped with a motor-service is No. 117, whose house is on DeKalb avenue, near Lewis. The engine has been in use for some time, but the hose wagon, completing the equipment, has just been added. The engine was installed April 24, 1912. It weighs eight tons, is driven by electric motors, and can throw 1,000 gallons of water a minute. It is supplied with a double steam pump. The electricity for the motors is supplied by a storage battery which is charged in the engine house by the Edison system. Each front wheel of that electric engine weighs half a ton, and inside each wheel is an electric motor which supplies the power. This fire engine was converted from a horse machine and is the first and only one in Greater New York which is propelled by the storage battery system.

During the time that No. 117 has been supplied with this electric equipment the company has responded to 135 alarms, and Captain Frank P. Moran said that there had not been a single hitch or breakdown. The captain declared that he had the highest opinion of the motor service for fire engines.

The hose wagon, which has just been added to the equipment, has what is known as a 50-horse gasoline motor and can travel at the rate of 45 miles an hour. It carries 1,500 feet of hose, is supplied with a turret pipe, can throw 1,500 gallons of water a minute, and has all other appliances for successful fire fighting. This hose wagon weighs six tons, fully equipped for service.

Committee Favors Installing Gong System.

Portland, Ore.—The fire committee of the Executive Board has recommended the installation of a semaphore and gong system throughout the city to warn people of the approach of fire apparatus. The system will cost approximately \$5,000. It would cost much more, but the cables for the system may be laid in the conduits of the two telephone companies free of cost. The gongs and semaphores will be controlled by wires from the fire-alarm headquarters and whenever the fire apparatus is called out the operator sets the alarm going and people on the street are warned of the approach of the apparatus. The gongs will be installed only at the congested street intersections of the city on both sides of the Willamette.

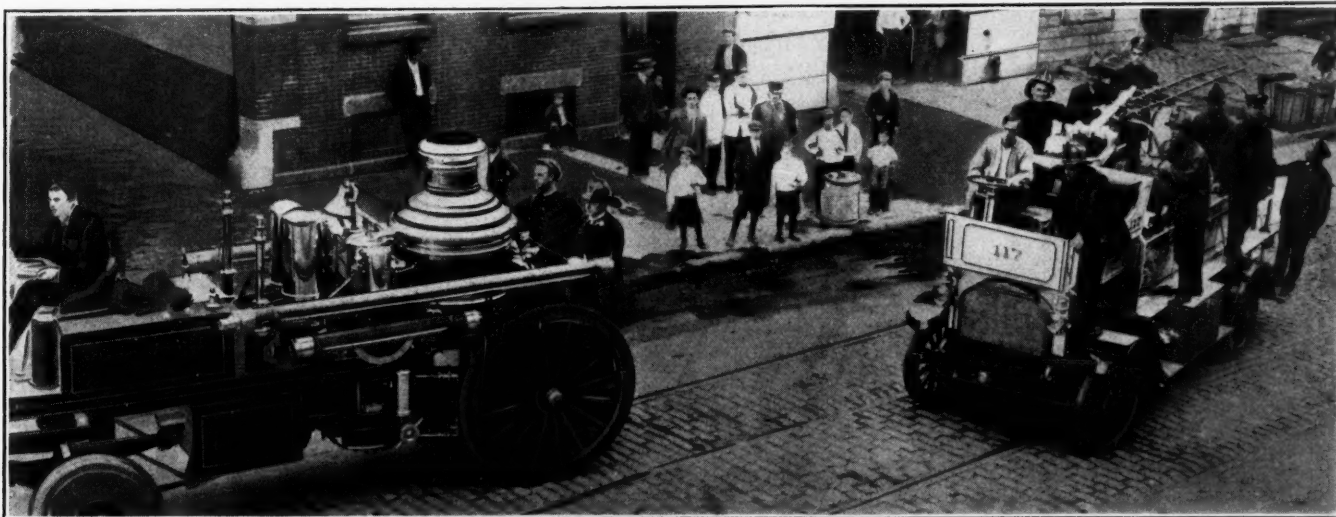
Chief Demonstrates Auto-Truck.

Murfreesboro, Tenn.—Chief Rosetta, of the Nashville Fire Department, brought his new auto-fire engine from Nashville to give it a tryout. He drove out Main street at a speed of about 50 miles an hour to show how quickly a fire could be reached.

Chief Rosetta complimented the fire department of Murfreesboro. He said that Murfreesboro should purchase an auto-hose wagon and chemical engine and truck, as it would save the city the expense of installing another fire company, chemical engine, etc. He returned with his new engine to Nashville in the afternoon.

Fire Truck Collides With Auto.

Windber, Pa.—While returning from answering an alarm in the East End one evening last week, R. T. Hickman, secretary of the Windber Fire Company, sustained a compound fracture of the right leg and a dislocation of the right knee when the new auto chemical truck, on which he was riding collided with another auto. The auto truck was following an automobile, when the latter turned into 15th street. Before the driver of the truck could turn out, the collision occurred, the heavy machine sideswiping the automobile.



Courtesy Brooklyn Daily Eagle.

STEAM ENGINE AND HOSE WAGON OF BROOKLYN'S FIRST MOTORIZED COMPANY.

Speedwell Auto Patrol for Dayton.

Dayton, O.—The horse patrol wagon stationed at the patrol station on Sears street, which has done many years of service in hauling a great variety of offenders to the central station, will soon have completed its labors for the city, with the installation of the new Speedwell auto patrol, which is nearing completion at the factory. Upon the arrival of the new auto patrol the value of the horse to the police department of the city is no more. Mounted policemen of previous days were displaced by the officer on a motorcycle, and horse-driven vehicles are now displaced by automobiles. The new patrol wagon now under construction at the Speedwell factory will probably be delivered early in the month of November.

Fire Engine Tests Are Made by Department.

Youngstown, O.—The test of the two fire pumps, the Robinson and the Knox on Crandall avenue one afternoon of last week, showed that each pumped over 1,100 gallons a minute while they were rated at 800 gallons each. The Robinson, according to the unofficial report, went slightly higher than the Knox, said Safety Director Parrock. He said that Chief Loller, of the fire department, had the exact figures, and that what he gave were approximate. Chief Loller, with William Bennett, his clerk, and Firemen Tom Muth and David Beynon, started for Columbus to have the Seagrave people there overhaul the chief's automobile and the combination hose wagon. A Robinson combination was put in place of the Seagrave at Central station for use in case of an emergency.

Efficient Licensed Chauffeurs for Fire Department.

St. Paul, Minn.—As a result of the agitation at the recent meeting of the fire board in regard to accidents ascribed to careless driving chauffeurs of fire department automobiles will be required to procure licenses as specified by the state law, and will be selected for their efficiency as drivers and not as experienced firemen. Commissioner Reuben Warner said the salary item is the only thing which will delay the institution of the new policy and this will be cared for at once. In regard to the payment of repair bills, a suggestion was made that the chief and driver be asked to pay them, but other provision will be made, as this plan is not considered feasible nor just, and the commission will continue to assume the responsibility. All the drivers now in the service will be required to procure licenses and pass an efficiency test, however, and should they fail to meet the requirements their position will be filled by new men. Mr. Warner stated positively that all chauffeurs selected hereafter will be taken from outside the department and a new order created calling for men experienced in that line.

Police Test Auto Horns.

Los Angeles, Cal.—The traffic police have just completed an official test of the bulb horn as an automobile warning signal. So far as is known it is the first test of the kind ever made. Members of the traffic squad went up and down various streets where the parking of automobiles is permitted and blew the bulb horns attached to some four hundred cars. Of this number only two gave what might be termed an adequate warning—that is, one that could be heard more than fifty feet away. The others emitted so slight a sound that it could barely be heard at all. In every case it was impossible to obtain anything but a wheeze when the bulb was grasped quickly, thus demonstrating that as an emergency signal the bulb horn is absolutely useless. The test was conducted secretly by the police for the purpose of gaining first-hand information on the automobile warning signal question now a leading issue in Los Angeles and before the City Council for solution. Those results will in all probability have an important influence upon the enactment of the ordinance recently introduced requiring the use of signals of greater power and dependability. Especial interest is lent to the test by the fact that the record of accidents resulting from the failure to hear automobile horns shows that 77 per cent. of these occurred at crossings where the noise of traffic is such that an efficient signal is absolutely necessary.

Fire Board President Against Auto Purchase.

Orange, N. J.—Convinced that Orange is paying too much for the new combination hose and chemical automobile, Dr. Frank M. Plummer, president of the Fire Board, voted to reject the apparatus. Commissioners James Maguire and Matthew Chalmers voted to accept the machine and it will shortly go into commission.

Dr. Plummer has been opposed to the purchase of this particular apparatus from the first. He said after the meeting that he based his opposition not on any belief that it is not a good one, but he believed the city could have done as well or better for less money.

GOVERNMENT AND FINANCE

Favor Commission Form.

Richmond, Va.—An amendment to permit cities to change their charters and adopt the commission form of government carried by an apparent majority of four to one. Amendments allowing city treasurers and county commissioners of the revenue to succeed themselves and not be limited to a term of two years also carried by an apparent majority of four to one.

N. Y. \$11,950,000 Increase in 1913 City Budget.

New York.—The city budget for 1913 has been adopted by the Board of Estimate.

The total allowed for the city's running expenses next year is \$193,047,246, against \$181,090,256 allowed in the budget for 1912, an increase of \$11,956,990.

It was explained in a brief statement from the budget committee that the tax rates in the various boroughs for 1913 would in all probability be the same or approximately the same as those for the present year. This is due to the fact that the amount of money in the general fund for the reduction of taxation, made up of water rates, dock rentals and many other sources of income, is much higher now than it was at the same time in 1911.

STREET CLEANING AND REFUSE DISPOSAL

Clean-Up Campaign Ends.

San Antonio, Tex.—The "clean-up" campaign, which has been waged in San Antonio since September 13, was brought to a close November 8, and the big "health" luncheon, planned as a fitting celebration of the success of the campaign, was held on November 13. The clean-up campaign is the work of the citizens' auxiliary committee to the Board of Health, which was organized on August 31, at a meeting held in the Chamber of Commerce auditorium. Dr. W. A. King was elected chairman of the committee, with Mrs. M. J. Bliem, first vice chairman; Mrs. James Vanlandingham, second vice chairman, and Ray M. Mackey, secretary. The real work of organization fell upon Mr. Mackey, who is secretary of the real estate division of the Chamber of Commerce. With his assistance, chairmen for each of the eight city wards were named. These, in turn, named precinct chairmen, and under their direction on special days in the week, the city's street cleaning gangs and sanitary forces waged the clean-up campaign.

RAPID TRANSIT

Forbids Bond Issue for New Cars.

New York, N. Y.—The Public Service Commission has refused to authorize the New York Railways to issue more than \$640,000 of the \$1,050,000 bonds it desired to issue for the construction of 175 stepless cars, and refused altogether to authorize the issue of \$550,000 to cover the cost of reconstructing the Fifty-fourth street barn. In a lengthy opinion Commissioner Maltbie went fully into the policy of the commission with regard to the right of a company to charge replacements to capital account.

It appeared at the hearing that there was no intention of adding the 175 new cars to the present equipment, but for every stepless car installed an old car would be with-

drawn from service. The commission held that, this being the case, and the cars to be displaced having been already charged to capital account, only the difference between the first cost of the new and of the old style cars should be funded.

The company argued that it should be permitted to capitalize at least the difference between the cost of the stepless cars and the present value of the old cars, which would be about \$5,400 a car on the average.

Commissioner Maltbie in his opinion held, however, that this was unreasonable. He pointed out that the commission had established in the reorganization proceedings of the old Metropolitan Company that the capitalization of its successor, the New York Railways Company, exceeded the fair value of its property by at least \$16,500,000. In this amount the cost of the street cars was capitalized not at their value at the time that the company was formed, but at their first cost. Consequently the commission must reckon that in the present capital of the company allowance had been made for the value of each car at \$3,200, the first cost and not at \$600, the present value. So in authorizing the issue of new capital for equipment, it must take note of the difference between the first cost of the old cars and the cost of the new, and not of the present value of the old cars and the cost of the new.

The company also argued for the right of paying the entire cost of the new equipment on the ground that the old cars were still fit for service and were to be retired only to suit the public convenience. Consequently it would be unjust to imperil the payment of interest on the income bonds through forcing the cost of replacements to be charged to earnings and not to capital.

To this Commissioner Maltbie retorted that the capitalization of operating expenses, of which replacements was one, was one of the policies which led to the ruin of the old Metropolitan system, and he thought it was extraordinary that the company which has been reared on the ruins of the Metropolitan should desire to continue this mistake. Moreover, the Commissioner declared that the commission could not legally authorize the charge of replacements to capital account.

So he decided that all the company might legitimately capitalize was the difference between the cost of the new and the old cars, as the company had already charged the cost of the old cars to capital account. This difference he reckoned at \$420,000.

But as the bonds of the New York Railways Company were at present selling at a discount, the commission authorized the issue of \$640,000 bonds to produce \$420,000, at the same time ordering the company to set aside each year out of earnings a sufficient sum to amortize the discount on the bonds before maturity.

Reasoning in much the same way, Commissioner Maltbie recommended the absolute refusal of the request of the New York Railways Company for the authorization of the issue of \$550,000 bonds to pay for the reconstruction of the Fifty-fourth street barns. He came to this conclusion on account of the projected sale of the barn of the company at Thirty-third street and Fourth avenue for \$1,750,000. It was largely in consequence of the disposal of this property that the Fifty-fourth street barn has to be enlarged, and so the Commissioner held that there was no reason why any bonds should be issued on this account.

Favor Prepayment Cars on Elevated Road.

Boston, Mass.—So successful has been the operation of the 50 prepayment cars which the Boston Elevated Railway Company has had in use on its lines the past year, that 75 additional cars of the same type have been ordered, according to the annual report of the company for the fiscal year ending June 30, 1912, just issued. Alterations are also being made to the earlier type of semi-convertible cars to equip them with the prepayment system. President Hugh Bancroft, in his report, said that the total length of surface tracks controlled by the company is now 372 miles, which with elevated mileage gives a total of 507 miles. The new power station at South Boston and substations at Roslindale, Coolidge Corner, Brookline; Kendall square, Cambridge; Arlington and East Cambridge have been completed, and the South Boston plant

began supplying power to these substations and the substation at Egleston square on Nov. 14, 1911. Mr. Bancroft further states that 20 additional elevated cars and 40 large Cambridge subway cars have been received, and 20 more cars have been ordered for the Cambridge subway.

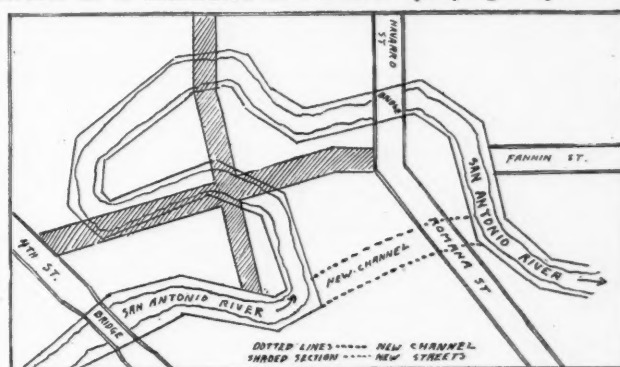
MISCELLANEOUS

Street Signs at San Angelo.

San Angelo, Tex.—White letters on a blue background, signs made of enamel, are the way all the streets in San Angelo are now marked, so anyone wishing to find the name of a street can do so with little trouble. The work was done under the guidance of the street and alley committee of the City Council.

Would Shorten River and Open New Channel.

San Antonio, Tex.—A petition has been submitted to the City Council by Paul S. Knittel to shorten the San Antonio River about 1,200 ft. and to change the course of the stream between Fourth street and Romana and Navarro streets as is illustrated in the accompanying map. It is



PLAN FOR OPENING NEW CHANNEL.

likely the streets and public improvements committee, of which Alderman Uhr is chairman, will have the proposition in charge.

The petitioner explained the project in the following statement:

"As the owner by right of options of the lands between Romana, Navarro and Fourth streets, I desire the permission and authority of the City of San Antonio to cut a canal across Romana street at the neck of the peninsula known as the Ursuline Addition, the waters of the river to be diverted into this canal.

"This canal to be lined with concrete abutments as shown, and a flush dam four feet high placed across the canal.

"As a part of this proposition I desire permission to open Jefferson and cross streets. I agree to furnish all necessary land therefor and to properly grade and gravel said streets.

"All work to be done under the direction and supervision of the City Engineer's office of San Antonio, for the proper execution of which work I agree to furnish reasonable bond. In consideration of the construction of the canal above mentioned and the opening and grading and graveling of the streets, I ask the City of San Antonio, by proper ordinances, to grant to me all right, title and interest the city has or may have in and to the river bed which will be abandoned by the changes herein contemplated, which river bed I agree to fill to the level of the surrounding land; and I further agree to bear the expense of all necessary changes in the storm water sewers made necessary by this change in the river bed.

"I further agree in this connection to fully protect the city by agreements with the property owners affected, or otherwise, against any and all claims they may have by reason of this changing the bed of the river. The proposed changes in the course of the river and the streets as contemplated by this proposition will greatly improve the sanitary and traffic conditions of that section of the city, and will also increase the taxable values a great deal, all without cost to the city, in view of which I trust you will give this petition your consideration and approval."

LEGAL NEWS

A Summary and Notes of Recent Decisions— Rulings of Interest to Municipalities

Street Obstructions—Liability of City and Abutting Owner.

Powers v. Boise City.—Where a street or sidewalk is obstructed by other persons, and the city has either actual or constructive notice thereof, it is primarily liable for injuries resulting therefrom, regardless of whether the abutting owner or a police officer or the person who placed the same there is liable to the city.—Supreme Court of Idaho, 125 P. R., 194.

Occupation Tax.—Validity.

Sawtell et al. v. City of Atlanta.—The ordinance of the city of Atlanta imposing a tax of a fixed amount upon all of the icehouses, ice manufacturers, or agencies not employing more than five wagons for selling or delivery purposes, and for each additional wagon above the number of five an additional tax of \$10, is not invalid upon the ground: (a) That it violates the constitutional provision that "all taxation shall be uniform upon the same class of subjects"; or (b) that it is placing a tax upon a mere incident of a business already taxed; or (c) that it amounts to double taxation.—Supreme Court of Georgia, 75 S. E. R., 982.

City Attorney—Services—Duties.

Board of Education of City of Ludlow v. Ritchie.—Ky. St. provides that a city council, prior to the election of a city attorney, shall fix his compensation, and that it shall be his duty to attend the meetings of the council, advise it in all matters of litigation or legal proceedings, and perform other duties required. Prior to plaintiff's election as city attorney, an ordinance was passed fixing salary, and defining his duties, which required him to give legal advice to the mayor and other officers, and boards of the city and also the board of education, and to "advise" the various boards, etc. Thereafter the council adopted a further ordinance providing that the services of the attorney should include all legal and other business of the city within his jurisdiction. Held, that the word "advise" was used in its broad sense, meaning that he should be the legal adviser of the various boards of the city in litigation and legal proceedings, and that he was not therefore entitled to extra compensation for caring for litigation between the board of education and a school-house contractor arising out of the latter's failure to perform his contract.—Court of Appeals of Kentucky, 149 S. W. R., 985.

Streets—Road Tax—Statutory Provisions.

City of McPherson v. Hanson.—The statutes authorized the collection of an annual road tax of \$3 from a class of persons in cities of the second class. An ordinance was enacted in harmony with these statutes. Afterwards, and before the tax became delinquent, the statutes were changed by a new enactment containing substantially the same provisions, but requiring 30 days' notice to the taxpayer before a prosecution could be maintained. It is held that the ordinance remained in force notwithstanding the change in statutes, and, the 30 days' notice having been given, a conviction should be sustained.—Supreme Court of Kansas, 125 P. R., 16.

Defective Streets—Rights of Travelers.

McCabe v. City of Butte.—A traveler on a public street may presume that it is in an ordinarily safe condition, and that the municipality has performed its duty to exercise ordinary diligence to make and keep the streets in a reasonably safe condition therefor, and that when they are rendered unsafe by reason of repairs, or for any other cause, and the authorities have notice, they will warn the public by lights or other means.—Supreme Court of Montana, 125 P. R., 133.

Bond Issues—Excess of Dept. Limit—Validity.

Truman v. Inhabitants of Town of Harmony.—That an issue of bonds by a town in aid of railroad construction exceeds the 5 per cent. debt limit prescribed by Constitution, an amendment passed February 9, 1877, does not prevent a court in equity from enforcing liability to the extent that the town could legally borrow; no difficulty of accounting or in applying the proceeds of the bonds appearing.—United States District Court, 198 F. R., 557.

Water Commissioners—Officers or Employees.

Village of Liberty v. Newkirk.—Where defendant, a clerk of the board of water commissioners of a village, collected water rents and fees, there being no such officer known to the law as a clerk of such board, he acted simply as an employe thereof, and in an action for conversion of the money so collected an answer that all the moneys received by him during his said employ as clerk were accounted for and paid over, and that a full settlement was had, is not demurrable.—New York Supreme Court, 137 N. Y. S., 494.

Repairing and Repaving Defined.

People ex. rel. Keller et al. v. City of Buffalo.—Where a street has been paved for a part of its width, subsequent pavement of those parts which have never been paved is not a "repavement," as affecting liability for the expense of an improvement. "Repairing" a pavement means restoration of the paved surface, while "repaving" means replacement of old pavement with new. A street paving assessment properly includes items of cost for removing lamp posts and hydrants. A meritorious local improvement assessment should not be set aside on account of any improper inclusion of relatively small items of cost.—New York Supreme Court, 137 N. Y. S., 464.

Commission Government—Charter Amendments—Scope.

State ex rel. Hindley et al. v. Superior Court for Spokane County et al.—Spokane City Charter authorizing the submission of initiative amendments, did not limit amendments to such as were revisory or prescribed supplemental changes as to the working of the charter adopted, but authorized the submission of amendments providing for a return to the system of council form of government, though altering and annulling the basic principle on which the charter was founded.—Supreme Court of Washington, 126 P. R., 920.

Police Power—Billboard Ordinances.

Kansas City Gunning Advertising Co. v. Kansas City et al.—Where the billboards of the city endangered the safety of citizens on the sidewalks, intensified the heat in the streets, tended to spread fires, impeded the work of the fire department, furnished a resort for criminals and a dumping place for refuse, and were used to display pictures calculated to deprave the youth, an ordinance prohibiting any billboards from being nearer than 12 feet from the street line, or more than 12 feet in height, and providing that the lower edge shall not be higher than 2 feet from the ground, that the boards shall be built in a straight line, that the ends shall be at least 3 feet from any wall or fence, that indecent or immoral pictures shall not be posted on them, and that a permit shall be first obtained from the superintendent of buildings before their erection, is not unconstitutional.—Supreme Court of Missouri, 144 S. W. R., 1099.

Negligence of Independent Contractor—Liability of City.

Sappington v. City of Centralia.—A city, employing an independent contractor to construct a waterworks plant pursuant to reasonably proper plans, not contemplating an interference with the premises of an individual, and not such as to make necessary, with the exercise of ordinary care, any damage to such premises, is not liable for damages to the premises caused by an overflow in consequence of the act of the contractor in breaking a culvert and leaving ridges of dirt preceding a rain, causing an overflow of the premises.—Kansas City Court of Appeals, Missouri, 144 S. W. R., 1112.

THE MUNICIPAL INDEX

In Which Are Listed and Classified by Subjects All Articles Treating of Municipal Topics Which Have Appeared During the Past Month in the Leading Periodicals.

It is our purpose to give in the second issue of each month a list of all articles of any length or importance which have appeared in all the American periodicals and the leading English, French and German ones, dealing more or less directly with municipal matters. The index is kept up to date, and the month of literature covered each time will be brought up to within two or three days of publication. Our chief object in this is to keep our readers in touch with all the current literature on municipal matters. In furtherance of this we will furnish any of the articles listed in the index for the price named after each article, except that where an article is continued in two or three issues of the paper, the price given is for each of said issues. In addition to the titles, where these are not sufficiently descriptive or where the article is of sufficient importance, a brief statement of its contents is added. The length also is given, and the name of the author when it is a contributed article.

ROADS AND PAVEMENTS.

Road Congress American Abstracts of papers. 6 pp., Engineering Record, Oct. 12. 10 cts.

The Road Congress at Atlantic City. 13 pp., Good Roads, Nov. 2. 10 cts.
Convention of the Alabama Good Roads Association. 1 p., Good Roads, Nov. 2. 10 cts.

Expenditures, Justifiable, for Road Improvement and the Distribution of the Cost. 1/2 p., Good Roads, Nov. 2. 10 cts.

Paying for Repaving in New York City. From report by M. P. Lewis. 2 pp., Engineering & Contracting, Oct. 23. 10 cts.

Three Millions for King County Roads. Paper before Pacific Highway Association. By J. T. Ronald. Illustrated, 2 pp., Pacific Builder & Engineer, Oct. 19. 15 cts.

Legislation, Road, and Syndic Associations in France. Paper before American Road Congress. By M. De Pulligny. 2 pp., Good Roads, Nov. 2. 10 cts. 1 p., Engineering & Contracting, Oct. 23. 10 cts.

Education, Highway Engineering. Paper before American Road Congress. By A. H. Blanchard. 2 1/2 pp., Surveyor, Oct. 25. 40 cts. 3 pp., Canadian Engineer, Oct. 17. 15 cts. 2 pp., Engineering & Contracting, Oct. 16. 10 cts.

Surveys, Field, for Road Construction. Paper before American Road Congress. By E. L. Griggs. 3/4 p., Engineering & Contracting, Oct. 16. 10 cts. 1 1/2 pp., Canadian Engineer, Oct. 31. 15 cts.

Problems of Locating and Relocating Roads. By W. R. White, Chief Engineer, Washington State Highway Commission. Paper before American Road Congress. Illustrated, 1 1/2 pp., Pacific Builder & Engineer, Oct. 19. 15 cts. 1/2 p., Engineering & Contracting, Oct. 30. 10 cts.

Road System, Canadian. By W. A. McLean. Paper before American Road Congress. 2 pp., Canadian Engineer, Oct. 10. 15 cts.

Work of the New York State Department of Highways. By Beverley Fleet. Illustrated, 4 1/2 pp., Good Roads, Nov. 2. 10 cts.

Convict Labor in Highway Construction. Paper before American Road Congress. By J. H. Pratt. 2 pp., Engineering & Contracting, Oct. 23. 10 cts.

Making a Highway in Two Days. By S. H. Lea, State Engineer. Illustrated, 4 pp., Engineering News, Oct. 10. 15 cts.
How to Build Good Roads. 3/4 p., Engineering News, Oct. 10. 15 cts.

Constructing Milwaukee County Roads. Illustrated, 3 pp., Contractor, Oct. 15. 20 cts.

Surface Oiling and Oil Macadam at Oakland, Cal. Paper before League of California Municipalities. By W. J. Bacchus. 1 p., Engineering & Contracting, Oct. 16. 10 cts.

Construction of Surfaces with Bituminous Material. Paper before American Road Congress. By A. H. Blanchard. 2 pp., Good Roads, Nov. 2. 10 cts. Engineering Record, Nov. 2. 10 cts. 2 pp., Canadian Engineer, Oct. 24. 15 cts.

Surface Treatment for Highways under Special Conditions. Paper before American Road Congress. By W. H. Connell. 1/2 p., Engineering & Contracting, Oct. 16. 10 cts.

Concrete Paving Methods in Various Places. Paper before Iowa Engineering Society. By J. H. Talbot. Illustrated, 3 pp., Concrete-Cement, October. 15 cts.

Methods of Constructing Concrete Alley Pavement at Billings, Mont. By J. A. Eddy. Illustrated, 1 p., Engineering & Contracting, Oct. 9. 10 cts.

Wood Paving, Soft. Paris Experiments. Tests of Various Treatments. Paper before International Association for Testing Materials. By P. Laboriere. 2-3 p., Surveyor, Oct. 25. 40 cts.

Cresoted Wood Paving. Cost in Middlesex County, England, for long term of years. 2-3 p., Surveyor, Oct. 4. 40 cts.

Brick Pavements at the American Road Congress. 4 pp., Brick, Oct. 15. 20 cts. Illustrated, 2 1/2 pp., Canadian Engineer, Oct. 24. 15 cts.

Brick Roads, Material, Construction and Maintenance. Paper before American Road Congress. By T. A. Randall. Illustrated, 8 pp., Clay Worker, October. 25 cts.

Brick Paving Tests. 1/4 p., Municipal Journal, Oct. 17. 10 cts.

Sand-Clay Roads. 1-3 p., Municipal Journal, Oct. 31. 10 cts.

Methods of Sand-Clay Road Construction in the South. Paper before American Road Congress. By W. S. Kellar. 2-3 p., Engineering & Contracting, Oct. 16. 10 cts.

Specifications for Asphaltic Concrete and for Sheet Asphalt Pavements, Vancouver, B. C. 2 pp., Engineering News, Oct. 24. 15 cts.

Street Openings, Providing for, for Subsurface Work. Paper before American Road Congress. By G. W. Tillson. 1/2 p., Engineering & Contracting, Oct. 30. 10 cts.

Cutting Street Pavements for Subsurface Main. 1/2 p., Engineering Record, Oct. 19. 10 cts.

Street Rail, Tabular Data Regarding Type of, used in Paved Streets. 1 1/2 pp., Electric Railway Journal, Oct. 11. 10 cts.

Stone, Qualities of, for Road Building 4 pp., Stone, October. 15 cts.

Physical Testing of Road Building Rock. Illustrated, 3 pp., Good Roads, Nov. 2. 10 cts.

Crossway Civic Improvement of New York City. Illustrated, 3 pp., Architectural Record, November. 25 cts.

SEWERAGE AND SANITATION.

Sanitation of Cities as shown at the Exposition at Roubaix. Illustrated, 19 pp., Technique Sanitaire, October. 50 cts.

Modern Sewerage and Water Problems. By Dr. Arthur Lederle. Paper before Illinois State Homeopathic Medical Society 3 1/2 pp., Chemical Engineer, October. 25 cts.

The Training of Sanitary Engineers. Paper before International Congress on Hygiene and Demography. By G. C. Whipple. 2 pp., Engineering News, Oct. 31. 15 cts.

Tests, Standard, of the efficiency of Sewage Treatment. Communication from A. E. Kimberly. 2-3 p., Engineering News, Oct. 10. 15 cts.

Sewage Treatment vs. Sewage Purification. Paper before American Public Health Association. By G. C. Whipple. 1 1/2 pp., Engineering & Contracting, Oct. 23. 10 cts.

British Practice in Sewage Disposal. Paper before Royal Institute of Public Health. By A. J. Martin. 2 1/2 pp., Engineering Record, Nov. 2. 10 cts.

Chemistry of Sewage Purification. Paper before American Chemical Society. By Dr. Arthur Lederle. 5 pp., Canadian Engineer, Oct. 31. 15 cts.

The Skilled Supervision of Sewage Purification Works. By F. Herbert Snow. Paper before American Public Health Assn. 2 1-3 pp., Engineering News, Oct. 10. 15 cts.

Oxidation Method, Sewage Disposal by. Paper before International Congress on Hygiene and Demography. By J. D. Watson. 2 1/2 pp., Surveyor, Oct. 4. 40 cts. 1 1/2 pp., Engineering Record, Oct. 19. 10 cts.

Sewage Disposal by Oxidation. Abstract of papers before International Congress on Hygiene and Demography. By J. D. Watson, G. J. Fowler, R. S. Weston, G. A. Soper, F. H. Bass and L. L. Tribus. 4 pp., Engineering News, Oct. 10. 15 cts.

Sewage Disposal by Oxidation Method. Paper before International Congress on Hygiene and Demography. By G. J. Fowler. 2 1/2 pp., Surveyor, Oct. 11. 40 cts.

Permissible Limits of Sewage Pollution as Related to New York Harbor.

Paper before American Public Health Association. By G. H. Soper. 2 pp., Surveyor, Oct. 25. 40 cts.

Discharge of Effluent Into Tidal Streams. Discussion before Royal Sanitary Institute. 2 pp., Surveyor, Oct. 11. 40 cts.

Plans of the Metropolitan Sewage Commission. 1 p., Engineering Record, Oct. 19. 10 cts.

Sludge Accumulations at Sewer Outfalls. 1 pp., Engineering Record, Oct. 12. 10 cts.

Methods of Sludge Disposal. Paper before International Congress on Hygiene and Demography. By Carl Imhoff. Illustrated, 2 1-3 pp., Engineering News, Oct. 24. 15 cts.

Sewer Construction at Portland, Ore. By E. J. Moore. Illustrated, 2 pp., Pacific Builder & Engineer, Oct. 19. 15 cts.

Large Sewers in Newark, N. J. Comprehensive drainage system for a portion of city. Open channel and concrete pipe. By E. S. Rankin, Engineer of Sewers and Drainage. Illustrated, 3 pp., Municipal Journal, Oct. 24. 10 cts.

Design and Construction of the O. K. Creek Sewer, Kansas City, Missouri. Illustrated, 3 pp., Engineering Record, Nov. 2. 10 cts.

Difficult Tunneling under Streets at Baltimore. By August Mencken. Illustrated, 1 1/2 pp., Engineering Record, Nov. 2. 10 cts.

A Sewer Made of Radial Chimney Brick. By Thomas Pealer. Illustrated, 1/2 p., Engineering News, Oct. 31. 15 cts.
Vitrified Sectional Sewers. Illustrated, 2 1/2 pp., Municipal Engineering, November. 25 cts.

Ventilation of Sewers. Paper before Royal Institute of Public Health. By T. De C. Meade. 4 pp., Canadian Engineer, Oct. 24. 15 cts.

Electrolytic Disposition of Sewage. By S. C. Caldwell. From Bulletin Ohio State University. 2 pp., Canadian Engineer, Oct. 17. 15 cts.

Imhoff Sewage Tanks at Winters, Cal. 1 p., Engineering & Contracting, Oct. 16. 10 cts.

Sewage Disposal at an Ohio Institution. By R. W. Pratt. Illustrated, 2 1/2 pp., Engineering Record, Oct. 26. 10 cts.

Disposal Works, Ikeston Sewage. By H. P. Ralikes. Illustrated, 7 pp., Surveyor, Oct. 4. 40 cts.

Intercepting Trap, Local Government Report on the. Paper before Institute of Municipal Engineers. By H. C. H. Shenton. 1 p., Surveyor, Oct. 11. 40 cts.

Camp Sanitation. By R. C. Hardman. Illustrated, 1 2-3 pp., Engineering News, Oct. 17. 15 cts.

Typhoid in Lettuce. 1/4 p., Municipal Journal, Oct. 31. 10 cts.

Tuberculosis, Modification and Registration of. 7 pp., Bulletin of Ohio State Board of Health September.

Plumbing Defects, Some Unusual. 1/2 p., Municipal Journal, Oct. 31. 10 cts.

Mosquitoes, Philadelphia Flights. 1/2 p., Municipal Journal, Oct. 24. 10 cts.

Smoke Abatement, Economic Phases of. 2 1/2 pp., Engineering News, Oct. 24. 15 cts.

Public Health, Influence of Town Planning upon the. Paper before Institution of Municipal Engineers. By W. L. Carr. 2 1/2 pp., Surveyor, Oct. 18. 40 cts.

Municipal Ordinances, Rules and Regulations Pertaining to Public Health. 5 pp., Public Health Reports, Oct. 4; 4 pp., Oct. 11.

WATER SUPPLY.

Water Works at Nashville, Tenn. By W. W. Burton. Illustrated, 2 pp. Fire & Water, October 9. 10 cts.

Ashton-Under-Lyne, Stalybridge and Dukinfield Waterworks. Illustrated, 2 pp., Surveyor, October 18. 40 cts.

Intake, New Water Supply, at Denver. Illustrated, 2 1/2 pp., Engineering Record, October 19. 10 cts.

Extension of Lake Intake vs. Filtration at Evanston, Ill. 2 1/2 pp., Engineering & Contracting, October 9. 10 cts.

Culvert Waterways in Eastern Kansas. Illustrated, 1 p. Engineering Record, October 12. 10 cts.

State Supervision of Dams and Reservoirs. Paper before New England Water Works Association. By F. P. McKibben. 1 1/4 pp. Engineering & Contracting, October 23. 10 cts.

Eastern Connecticut Experiences in State Control of Dams and Reservoirs. Paper before New England Water Works Association. By C. E. Chandler. 3/4 p. Engineering & Contracting, October 23. 10 cts.

Reservoir. Progress on the Ashokan, and Adjacent Works. Illustrated, 2 1/2 pp. Engineering Record, October 19. 10 cts.

New High-Service Reservoir at Baltimore, Md. Illustrated, 3 pp. Engineering & Contracting, October 16. 10 cts.

Dam. Colorado River, near Austin, Texas. Illustrated, 1 p. Contractor, October 15. 20 cts.

Embankments which are Intended to Sustain a Head of Water. By H. D. Miller. Illustrated, 2 1/2 pp. Engineering & Contracting, October 23. 10 cts.

Water Mains. Breaks in Detroit. 5 pp. Engineering News, October 24. 15 cts.

Cleaning Water Mains in Halifax, Nova Scotia. Paper before Canadian Municipalities. By F. W. W. Doan. 1/2 p. Engineering & Contracting, October 30. 10 cts.

Constructing a 48-inch Wood Stave Pipe Line near Atlantic City. Illustrated, 8 pp. Engineering & Contracting, October 30. 10 cts.

Constructing Municipal Water Tunnel at Santa Barbara, Cal. Paper before League of California Municipalities. By L. M. Hyde. 2 pp. Engineering & Contracting, October 30. 10 cts.

Water Hammer Experiments. Effect of Surge Tanks Connected to Pipe Lines. By M. R. Lott. Illustrated, 1 1/2 pp. Engineering Record, October 26. 10 cts.

Booster Pumps. or Reaching the High Places. Paper before Central States Water Works Association. By H. E. Cole. 2 pp. Engineering News, October 17. 15 cts.

Water Rates for New Britain. 1/2 p. Municipal Journal, October 31. 10 cts.

Paying for Privilege of Using Water in Automatic Sprinklers. 3/4 p. Engineering Record, October 26. 10 cts.

Convention of Central States Water Works Association. Abstracts of papers. Illustrated, 6 pp. Fire & Water, October 16. 10 cts.

Convention of the Central States Water Works Association. Abstracts of papers. 2 1/2 pp. Engineering & Contracting, October 9. 10 cts.

Auto Vehicle. Use of, in the Efficient Operation of a Water Works System. By G. A. Heinman. Illustrated, 1 1/2 pp. Engineering & Contracting, October 16. 10 cts.

Filtration Plant at Niles, Ohio. By R. A. Boothe. Illustrated, 5 pp. Engineering & Contracting, October 23. 10 cts.

Regulating Device for Filters. 1 p. Engineering Record, October 19. 10 cts.

Sanitation of Water Supply. Abstracts of papers before the International Congress of Hygiene and Demography. By W. T. Sedgwick, A. C. Houston, Geo. W. Fuller, Samuel Rideal, M. Diennert, G. A. Johnson, G. Gaertner and Rudolph Herzig. 5 1/2 pp. Engineering News, October 17. 15 cts.

Purification of Water from Standpoints other than Hygienic. Removing color, algae, corrosion. Paper before International Congress on Hygiene and Demography. By G. W. Fuller. 1 1/2 pp. Municipal Journal, October 17. 10 cts.

Water Purification Viewed from the Hygienic Standpoint. Paper before International Congress on Hygiene and Demography. By Allen Hazen. 2 pp. Canadian Engineer, October 17. 15 cts.

Methods of Water Purification. 3 pp. Municipal Engineering, November. 25 cts.

Papers on Water Purification before the Central States Water Works Assn. 1 1/4 pp. Engineering News, October 10. 15 cts.

Fargo's Water Purification Plant. Lime used for softening and Sulphate of Iron or Aluminum as coagulant for river water. By R. J. Dunlap. Illustrated, 2 pp. Municipal Journal, October 17. 10 cts.

Ozone Water Purification. 1/4 p. Municipal Journal, October 17. 10 cts.

Ozone Sterilization in Baltimore. Communication from A. E. Walden. 1/2 p. Municipal Journal, October 24. 10 cts.

Pollution of Lakes and Waterways. Conference on. Abstracts of papers. 2 1/2

pp. Engineering Record, November 2. 10 cts. 2 1/2 pp. Engineering News, October 31. 15 cts.

Standards of Purity for Rivers and Waterways. Report of the Committee of the National Association for Preventing the Pollution of Rivers and Waterways. 1 1/2 pp. Engineering News, October 31. 15 cts.

Liability. Municipality's, for Negligence in Operation Waterworks. By S. Simpson. 1 1/2 pp. Municipal Journal, October 31. 10 cts.

Valuation of the Freeport, Ill., Water Works Properties. 4 pp. Engineering & Contracting, October 9. 10 cts.

STREET LIGHTING AND POWER PLANTS.

Street Illumination. Tabular Data Concerning Private Plants. 5 pp. Municipal Journal, November 7. 10 cts.

Tabular Data Concerning Street Illumination. Municipal Plants. 4 1/2 pp. Municipal Journal, November 7. 10 cts.

Street Illumination in a Small Town. Illustrated, 5 pp. Good Lighting, October. 20 cts.

Illuminants. The Efficiency of. By C. P. Steinmetz. Illustrated, 3 pp. General Electric Review, November. 20 cts.

Street Lighting. Mazda Lamp. Characteristics and life. Low and intensity lighting. Distribution and installation. Lamp Devices. Ornamental Lighting. By A. L. Chapin. Illustrated, 4 1/2 pp. Municipal Journal, November 7. 10 cts.

Advance in Street Lighting. Illustrated, 7 pp. Municipal Engineering, November. 25 cts.

Street Lighting in Alameda, Cal. Illustrated, 1 p. Electrical World, November 3. 10 cts.

Municipal Electric Plants. 1/2 p. Municipal Journal, November 7. 10 cts.

Electric Works. South Norwalk. History, equipment and operating and business methods of one of the oldest and probably the most successful municipal electric plant in this country. Latest financial report. Illustrated, 5 pp. Municipal Journal, November 7. 10 cts.

South Norwalk's Electric Light Plant. 1/2 p. Municipal Journal, October 17. 10 cts.

White Way Lighting. Tabular Data Concerning Private Plants. 1 p. Municipal Journal, November 7. 10 cts.

Tabular Data Concerning White Way Lighting. Municipal Plants. 1 p. Municipal Journal, November 7. 10 cts.

Ornamental Street Lighting. Arc, festoon and ornamental post systems. List of cities using each. Payment for ornamental lighting. Description of post system at Atlanta, Ga. 2 1/2 pp. Municipal Journal, November 7. 10 cts.

Paying for Ornamental Street Lighting. 1/2 p. Municipal Journal, November 7. 10 cts.

Characteristic Ornamental Street Lighting. Illustrated, 11 pp. Municipal Engineering, November. 25 cts.

Improved Street Lighting in Utica, N. Y. Luminous arcs on ornamental standards. Wires under ground. Sixty-six installed in four weeks. Illustrated, 1 1/2 pp. Municipal Journal, November 7. 10 cts.

"White Way" for a small city. 1/4 p. Municipal Journal, November 7. 10 cts.

Syracuse Ornamental Lighting. Five-light standards carrying tungsten lamps. Wires underground in cable. Merchants bear all expense. Illustrated, 1 1/2 pp. Municipal Journal, November 7. 10 cts.

Indianapolis Ornamental Lighting. Standards carry five tungsten lights each. Occupants pay for lighting. Method not satisfactory to lighting companies. By H. S. O'Brien. Illustrated, 2 pp. Municipal Journal, November 7. 10 cts.

Municipal Lighting in Pitcairn. 1/2 p. Municipal Journal, November 7. 10 cts.

Lighting Standards. Spacing of Display. 1/4 p. Municipal Journal, November 7. 10 cts.

Venice Concrete Lampposts. Illustrated, 1/4 p. Municipal Journal, November 7. 10 cts.

Lamps for Display Lighting. 1/4 p. Municipal Journal, November 7. 10 cts.

Enclosed Flame Arc Lamps. By G. N. Chamberlain. 4 pp. General Electric Review, November. 20 cts.

New Types of Ornamental Luminous Arc Lamps for the Lighting of Parkways. Business and Residential Streets. By C. A. B. Halvorson, Jr. Illustrated, 7 pp. General Electric Review, November. 20 cts.

Steel Towers for Overhead Transmission Lines. By Albert Still. Illustrated, 4 pp. Canadian Engineer, October 10. 15 cts.

Gas Competition in Street Lighting. 1/2 p. Electrical Review, October 12. 10 cts.

Pipe Line Construction. Some Unusual, in New York City. By C. C. Simpson, Jr. Illustrated, 5 pp. Am. Gas Light Journal, October 4. 10 cts.

Welding High Pressure Pipe Lines. By L. B. Jones. Illustrated, 2 1/2 pp. American Gas Light Journal, October 21. 10 cts.

High Service Producer Gas Pumping Station at Reading. By E. L. Neubling. Illustrated, 1 p. Engineering Record, October 26. 10 cts.

Calorimetry. By W. H. Heinman. 1 1/2 pp. American Gas Light Journal, October 28. 10 cts.

Work of a Municipal Gas Testing Station. (Concluded from September). By E. K. Hammond. Illustrated, 3 pp. Chemical Engineer, October. 25 cts.

Regulations. Gas Pressure, of the Public Service Commission for Companies in the Borough of Manhattan, New York City. 2 1/2 pp. Engineering News, October 31. 15 cts.

Sheboygan Gas Case. Extended abstract of decision by the Wisconsin Commission involving valuation and analysis of income and expenses of the gas company. 2 pp. Public Service Regulation, October. 25 cts.

Outdoor Electrical Installation. Some Features of the. By F. C. Green. Illustrated, 14 pp. Proceedings of the American Institute of Electrical Engineers. November. \$1.00.

Combined Central Heating and Electric Plants. Paper before National District Heating Association. By E. D. Dreyfus. Illustrated, 6 pp. Industrial Engineering, October. 20 cts.

Sale of Appliances by Electric Companies. Benefit to the Public in. By L. H. Newbert and H. P. Pitts. 1 p. Public Service, November. 20 cts.

Coal. Spontaneous Heating of. 2 1/2 pp. Power, October 29. 5 cts.

Testing. Refined Apparatus for Boiler. By A. A. Cary. Illustrated, 4 pp. Iron Age, February 17. 20 cts.

Mistakes in Testing Steam Boilers. By A. A. Cary. 2 1/2 pp. Iron Age, October 10. 20 cts.

Oil Engines. German Progress in Large. By F. E. Junge. Illustrated, 1 1/2 pp. Power, October 22. 5 cts.

Cylinder. Losses in the Steam. By R. C. H. Heck. Illustrated, 3 pp. Power, November 5. 5 cts.

Hydro-Electric Power Development. The Coquitlam-Buntzen. Illustrated, 6 pp. Canadian Engineer, October 10. 15 cts.

Jordan River Development of the Vancouver Island Power Company. Illustrated, 5 pp. Engineering Record, October 19. 10 cts.

Hydroelectric Developments on the Presumpscot River. Illustrated 1 p. Engineering Record, November 2. 10 cts.

FIRE AND POLICE.

Fire Prevention by Fire Departments. 4 pp. Insurance Engineering, October. 25 cts.

Reason Why Tin Clad Fire Doors Fail. By I. J. Owen. 1/2 p. Insurance Engineering, October. 25 cts.

Fire Shutters for Sky Scrapers. By D. H. Ray. Illustrated, 1 p. Engineering News, October 31. 15 cts.

Fire Exit Facilities. Superiority of the Philadelphia Fire Tower Acknowledged by New York City's Bureau of Buildings. Illustrated, 10 pp. Insurance Engineering, October. 25 cts.

Automatic Sprinkler Connections. 1/2 p. Municipal Journal, October 17. 10 cts.

Fire Hazard from Oil Wells. Illustrated, 1/2 p. Municipal Journal, October 17. 10 cts.

Firemen's Insurance Plan of the National Firemen's Association. 1 p. Firemen's Herald, October 26. 5 cts.

Fire Tests on Building Partition Walls in Cleveland. Illustrated, 1 1/2 pp. Engineering Record, November 2. 10 cts.

Fire Hose. Labels on. 1/2 p. Municipal Journal, October 17. 10 cts.

Pumps. Centrifugal Fire. Advantages include simplicity, low cost and direct connection to gasoline motor. Appliances for priming. 3/4 p. Municipal Journal, October 24. 10 cts.

Convention of International Association of Fire Engineers. Abstracts of papers. Illustrated, 13 pp. Fire & Water, October 2. 14 pp. October 9. 10 cts.

Matters of Interest to Insurance Engineers in the Proceedings of the Sixth Congress of the International Association for Testing Materials. 8 pp. Insurance Engineering, October. 25 cts.

Drill School. Los Angeles. Illustrated, 1 1/2 pp. Fireman's Herald, November 2. 5 cts.

Fire Departments in Two Small Cities. 1/2 p. Municipal Journal, October 24. 10 cts.

Motor Apparatus at Ocean Park Fire. Illustrated. 1/2 p. Municipal Journal, October 31. 10 cts.

Ventnor's Automobile Fire Apparatus. Illustrated. 1/4 p. Municipal Journal, October 17. 10 cts.

Efficiency of Motor Pumping Engines. By G. W. Booth. 5 pp. Insurance Engineering, October. 25 cts.

Report on the City of Cleveland, Ohio. By National Board of Fire Underwriters. Illustrated, 40 pp. October.

Report on the City of Englewood, N. J. By National Board of Fire Underwriters. Illustrated, 8 pp. October.

Report on the City of Atchison, Kan. By National Board of Fire Underwriters. Illustrated, 12 pp. October.

Report on the City of Joplin, Mo. By National Board of Fire Underwriters. Illustrated, 18 pp. October.

Report on the City of Chelsea, Mass. By National Board of Fire Underwriters. Illustrated, 21 pp. October.

Police, Chicago's Mounted. 1/2 p. Municipal Journal, October 31. 10 cts.

Chicago Mounted Police. By C. C. Healey. Illustrated, 2 pp. Municipal Engineering, November. 25 cts.

Philadelphia Police School. 1/4 p. Municipal Journal, October 17. 10 cts.

Need for Police Women in City Work. By Prof. Graham Taylor. 7 pp. Bulletin of the Chicago City Club. October 31.

GOVERNMENT AND FINANCE.

Bookkeeping, Model Municipal. 2 1/2 pp. Municipal Journal, October 17. 10 cts.

Uniform Accounting in New Jersey. Commission issues circular calling for representatives of utilities to discuss tentative classification schedule. 3 pp. Public Service Regulation, October. 25 cts.

Depreciation Data in Rate Making and Appraisal Problems. By H. P. Gillette. 3 1/2 pp. Engineering & Contracting, October 30. 10 cts. 4 1/2 pp. Electrical World, November 3. 10 cts.

Appropriating Funds, Method based upon Physical Statistics, as well as Cash Expenditures. From report by George Cromwell, President of the Borough of Richmond. 3 pp. Engineering & Contracting, October 30. 10 cts.

Public Utilities Law, Operation of the Wisconsin. 1 p. Engineering Record, October 26. 10 cts.

A California Problem. Should California Municipalities Confer upon Railroad Commission their powers over public utilities? By Comr. Max Thelen. 2 pp. Public Service Regulation, October. 25 cts.

Methods of Procedure under the Wisconsin Utility Law. 2 pp. Engineering & Contracting, October 16. 10 cts.

Determining the Life of Public Utilities. 2 1/2 pp. Engineering & Contracting, October 23. 10 cts.

Regulation and Utility Financing. The Effect of Restricted Rate of Return on Capital. By A. S. Miller. 2 pp. Public Service, November. 20 cts.

Public Utility and the Community. Fallacy of Competition of Public Utilities under Public Service Commission. Paper before Northwest Electric Light and Power Association. By F. T. Griffin. 1 1/2 pp. Pacific Builder & Engineer, October 5. 15 cts.

Superannuation and Security of Tenure. Paper before Institution of Municipal Engineers. By A. W. Gray. 2 pp. Surveyor, October 18. 40 cts.

Superannuation, Security of Tenure and Mutual Protection. Paper before Institution of Municipal and County Engineers. By J. L. Redfern. 2 pp. Surveyor, October 4. 40 cts.

Contractors and Public Officials. Paper before American Road Congress. By C. A. Crane. 2 pp. Municipal Journal, October 17. 10 cts. 1 p. Engineering & Contracting, October 9. 10 cts. 2 3/4 pp. Engineering News, October 17. 15 cts. 1 1/2 pp. Contracting, October 15. 20 cts. Contractors, Engineers and Officials. 1/4 p. Municipal Journal, October 17. 10 cts.

Assessment System, Houston's. 1/4 p. Municipal Journal, October 17. 10 cts.

Commission, Colorado Springs. Result of three years' government by commission. Reduced expenditures, no partisan politics. 3/4 p. Municipal Journal, October 24. 10 cts.

City Manager for Sumter. 1/2 p. Municipal Journal, October 24. 10 cts.

Expert City Management. By W. V.

Foulke. 1 1/2 pp. Citizens' Bulletin, October 26. 5 cts.

Necessity for Skillful Maintenance. 1/2 p. Municipal Journal, October 17. 10 cts.

STREET CLEANING AND REFUSE DISPOSAL.

Refuse Disposal in Easton, Pa. 1/2 p. Municipal Journal, October 24. 10 cts.

Collection and Disposal of Municipal Waste. By I. S. Osborne. 3 pp. Bulletin of Ohio State Board of Health. September.

Street Cleaning, Elementary Theory and Principles of. Paper before American Public Health Association. By S. Whinery. 1 p. Engineering Record, October 26. 10 cts.

TRAFFIC AND TRANSPORTATION.

Passenger Transport in London: The Comparative Economy of the Electric Railway and the Motor Omnibus. 2 pp. Engineering News, October 31. 15 cts.

Transportation in San Francisco. 1 p. Engineering Record, October 12. 10 cts.

Subways, New York City, at Grand Central Terminal. Illustrated, 1 p. Engineering News, October 24. 15 cts.

Development of Electric Railway situation in Toronto, at critical period, shown by official action. 6 pp. Public Service Regulation, October. 25 cts.

Sliding Scale for Street Railway Dividends based on Quality of Service. Paper before National Municipal League. By J. W. S. Peters. 1 1/2 pp. Engineering News, October 10. 15 cts.

Intangible Values of Electric Railways and their Determination. By W. J. Hagenah. 1 1/2 pp. Public Service, November. 20 cts.

Winter Troubles on Electric Railways. Paper before Illinois Electric Railway Assn. By C. J. Jones. 1 1/2 pp. Engineering News, October 10. 15 cts.

MATERIALS AND STRUCTURES.

Aesthetic Consideration in the Design and Operation of Engineering Work. Paper before British Association for the Advancement of Science. By Archibald Barr. 2 pp. Engineering Record, October 19. 10 cts.

Brick Work, Influence of the Sun on. By O. D. Maginnis. 1 p. Brick, November 1. 20 cts.

Testing Sand, Importance of. By C. M. Chapman. 1 p. Engineering Record, October 12. 10 cts.

Painting Exposed Structural Steel. 3/4 p. Engineering Record, October 26. 10 cts.

Mortars, The Use of Badly Mixed, and other causes for the Deterioration of Masonry. 10 pp. Revue de L'Ingenieur. 75 cts.

Will Mixing Concrete Too Wet Cause Its Eventual Failure? Communication from Ernest McCullough. 1/2 p. Engineering News, October 17. 15 cts.

Cement Shipped in Bulk, Handling. By Gordon Wilson. Illustrated, 1 p. Engineering & Contracting, October 9. 10 cts.

Comparative Economy of Shipping Cement in cloth and paper bags. 3/4 p. Engineering & Contracting, October 9. 10 cts.

Bridge, The Queensboro, and the Authority of the Engineer. 3/4 p. Engineering Record, November 2. 10 cts.

Construction of the South Main Pier of the Quebec Bridge. By H. P. Borden. Illustrated, 4 pp. Canadian Engineer, October 31. 15 cts.

The Sidi Rached Masonry Bridge, Constantine, Algiers. Illustrated. 3 pp. Engineering News, October 10. 15 cts.

Suspension Bridge with 400-Foot Central Span Erected without Steam Power at Massena Center, N. Y. Illustrated, 2 1/2 pp. Engineering Record, November 2. 10 cts.

The North Side Point Bridge, Pittsburgh. Illustrated, 4 1/2 pp. Engineering News, October 17. 15 cts.

Milwaukee's Concrete Viaduct. Ten arches, totaling more than 2,000 feet. Construction methods. By Duane Mowry. Illustrated, 3 1/4 pp. Municipal Journal, October 31. 10 cts.

Four-Track Columbus Avenue Viaduct. Illustrated, 1 1/2 pp. Engineering Record, October 26. 10 cts.

Reinforced Concrete Arch, North Toronto. By E. A. James. Illustrated, 2 1/2 pp. Canadian Engineer, October 10. 15 cts.

Dynamiting an Unsatisfactory Concrete Arch. Illustrated, 1 p. Engineering News, October 17. 15 cts.

MISCELLANEOUS.

Town Planning from an Engineering Aspect. Paper before Society of Engineers. By E. R. Matthews. Illustrated, 5 pp. Surveyor, October 11. 40 cts.

The Prime Essential in City Planning. 1/2 p. Engineering News, October 17. 15 cts.

Canberra, The New Capital City of Australia. By W. B. Griffin, Architect. Illustrated, 8 pp. Architectural Record, November. 25 cts.

City Planning. 1/2 p. Municipal Journal, Oct. 31. 10 cts.

City Planning Contest. 1/2 p. Municipal Journal, Oct. 24. 10 cts.

Harbor Works at Portland, Ore. Design of. By C. W. Staniford, E. P. Goodrich and W. J. Barney. Illustrated, 6 pp. Engineering News, Oct. 10. 15 cts.

Bennett Plans for a Greater Portland. By M. N. Dana. Illustrated, 15 pp. Pacific Builder & Engineer, November 2. 15 cts.

Canadian Ports of the Pacific. Illustrated, 4 1/2 pp. Canadian Engineer, October 10. 15 cts.

Housing and Garden Cities, Co-partnership. Address by Henry Vivian. 7 pp. Bulletin of the Chicago City Club, October 12.

Satellite Cities. By G. R. Taylor. Illustrated, 15 pp. Survey, November 2. 25 cts.

Engineering Works of Kyoto, Japan. By S. Tanabe. 3/4 p. Engineering News, October 17. 15 cts.

Amherst. General Description. By W. R. Brown. Illustrated, 8 pp. Western New England, October. 20 cts.

Wrexham and its Municipal Work. By J. England. Paper before Municipal and County Engineers. Illustrated, 3 pp. Surveyor, October 25. 40 cts.

Newest New York. By Carlton Moorpark. Illustrated, 4 pp. Architectural Record, November. 25 cts.

Building Inspection, An Analysis of Municipal. 1 p. Engineering News, October 24. 10 cts.

Repairing City Property. By W. T. Childs, Deputy City Controller, Baltimore. 3/4 p. Municipal Journal, October 24. 10 cts.

Library, A Traveling. Illustrated, 1/4 p. Municipal Journal, October 24. 10 cts.

Mail Box Problem. 1/3 p. Municipal Journal, October 24. 10 cts.

Telephone Companies, Rate Schedule of. Analysis of the situation in New Jersey as presented by Commission's inspector. 10 pp. Public Service Regulation, October. 25 cts.

Passing of Dual Telephone Systems. 1 1/2 p. Public Service, November. 20 cts.

Recreation Centers, Chicago's. By S. A. Teller. Illustrated, 4 pp. Municipal Engineering, November. 25 cts.

Park Benches of Concrete and Wood. Illustrated, 1/4 p. Municipal Journal, October 24. 10 cts.

Bathhouse, A Large, White Sulphur Springs, W. Va. Illustrated, 1 p. Engineering News, October 31. 15 cts.

Pittsburgh Hump. Illustrated. 3/4 p. Municipal Journal, October 24. 10 cts.

Traffic Census in Chicago. 1/4 p. Municipal Journal, November 7. 10 cts.

Compressed Air Work, Rules and Legislation Regarding. 3/4 p. Engineering Record, October 19. 10 cts.

Utilities Co-operate, When City and Experience of Missoula, Mont. Illustrated, 1 1/2 pp. Public Service, November. 20 cts.

Proper Attitude of the Utility Employee Towards the Public. By H. H. Whiteside. 1 p. Public Service, November. 20 cts.

The Viewpoint of a Utility Manager. By E. M. Addis. Illustrated, 2 1/2 pp. Public Service, November. 20 cts.

High School is Unique, Venice. By C. L. Edholm. Illustrated, 1/4 p. Municipal Journal, October 24. 10 cts.

River, Controlling the Mississippi. Paper before Interstate Levee Congress. By Col. C. McD. Townsend. 3 pp. Engineering News, October 31. 15 cts.

Match Industry, Some Present Day Aspects of the. From Journal of the Society of Chemical Industry. By E. G. Crayton. 4 pp. Chemical Engineer, October. 25 cts.

Convention of the American Society of Municipal Improvements. 1/2 p. Municipal Journal, October 31. 10 cts.

Report of the Twelfth Annual Convention of the Union of Canadian Municipalities. Abstract of papers. 32 pp. Canadian Municipal Journal, October. 25 cts.

NEWS OF THE SOCIETIES

Calendar of Meetings.

November 12-15.
AMERICAN SOCIETY OF MUNICIPAL IMPROVEMENTS.—Annual Convention, Dallas, Tex.—A. Preccott Folwell, Secretary, 50 Union Square, New York.

November 20-21.
SOUTHERN APPALACHIAN GOOD ROADS ASSOCIATION.—Fourth Annual Convention, Atlanta, Ga.—Cyrus Kehr, Vice-President, Knoxville, Tenn.

November 19-22.
AMERICAN CIVIC ASSOCIATION.—Annual Convention, Baltimore, Md.—Richard B. Watrous, Secretary, Union Trust Building, Washington, D. C.

December 3-6.
AMERICAN ROAD BUILDERS' ASSOCIATION.—Ninth Annual Convention, Music Hall, Cincinnati, O.—E. L. Powers, Secretary, 150 Nassau street, New York City.

December 2-3.
AMERICAN SOCIETY OF REFRIGERATING ENGINEERS.—Annual Meeting, New York City.—W. H. Ross, Secretary, 154 Nassau St., New York City.

December 2-5.
NATIONAL COMMERCIAL GAS ASSOCIATION.—Annual Meeting, Atlanta, Ga.—Louis Stotz, Secretary, 29 W 39th St., New York City.

December 3-6.
AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Annual Meeting, New York City.—C. W. Rice, Secretary, 29 W. 39th St., New York City.

December 4-6.
AMERICAN INSTITUTE OF CHEMICAL ENGINEERS.—Annual Meeting, Detroit, Mich.—J. C. Olsen, Secretary, Polytechnic Institute, Brooklyn, N. Y.

December 5-7.
NATIONAL SOCIETY FOR THE PROMOTION OF INDUSTRIAL EDUCATION.—Annual Convention, Philadelphia, Pa.—C. A. Prosser, Secretary, 105 E. 22d St., New York City.

December 9-12.
ASSOCIATION OF AMERICAN PORTLAND CEMENT MANUFACTURERS.—Annual Meeting, New York City.—Percy H. Wilson, Secretary, Land Title Building, Philadelphia, Pa.

December 12-18.
NATIONAL ASSOCIATION OF CEMENT USERS.—Annual Convention, Pittsburgh, Pa.—R. L. Humphrey, President, Harrison Building, Philadelphia, Pa.

December.
FIRE EXPOSITION AND INTERNATIONAL CONFERENCE OF FIRE PREVENTION, PROTECTION AND EXTINGUISHMENT.—Madison Square Garden, New York City.—A. D. V. Storey, Secretary, 1269 Broadway, New York, N. Y.

The American Society of Mechanical Engineers.

The annual meeting, New York, December 3-6, will comprise sessions upon a greater variety of topics than have ever been arranged for a meeting. No less than ten sessions are contemplated, with papers grouped to form symposiums upon various subjects. This broadening of the society's work is the result of the sub-committees lately appointed under the direction of the Committee on Meetings. The publication of the papers for the annual meeting began in the September number of *The Journal*. The last will appear in the December number or be printed in pamphlet form for distribution at the meeting, possibly being published in later issues of *The Journal*. The papers already published are as follows:

The Principles of Valuing Property, Henry K. Rowell.

Increase of Bore of High-Speed Wheels by Centrifugal Stresses, Sanford A. Moss.

Investigation of Efficiency of Worm Gearing for Automobile Transmission, Wm. H. Kenerson.

Measurement of Air in Fan Work, Charles H. Treat.

The Baltimore Sewerage Pump Valve, A. F. Nagle.

The Vaulclain Drill, A. C. Vaulclain and Henry V. Wille.

Tests of a 1,000-H.P., 24 Tubes High, B. & W. Boiler, B. N. Bump.

The V-Notch Weir Method of Measurement, D. Robert Yarnall.

Dimensions of Boiler Chimneys for Crude Oil, C. R. Weymouth.

Air in Surface Condensation, George A. Orrok.

The Centrifugal Blower for High Pressures, Henry F. Schmidt.

Measurement of Natural Gas, Thos. R. Weymouth.

One whole session will be devoted to reports of technical committees which it is expected will be of as great interest as any other feature of the professional sessions. One of the reports is an exhaustive document prepared by the Power Tests Committee. When finally revised and submitted to the society, this will supersede the earlier reports upon methods for conducting trials of pumping engines, locomotives, steam boilers and steam engines, besides taking up the testing of other apparatus, such as gas and oil engines, waterwheels and compressors, blowers and fans. The latest society report upon any of these subjects was in 1902 and the earliest in 1890, twenty-two years ago, so that the need for revision is evident.

The general arrangement of the sessions will be substantially as follows:

Tuesday evening, December 3: President's address, followed by the reception to the president-elect, the retiring president, Dr. Alex. C. Humphreys, and their ladies.

Wednesday morning, December 4: Business meeting, followed by simultaneous sessions, under the direction of the Gas Power Section and the sub-committees on Machine Shop Practice and Textiles. Wednesday afternoon: Reports of committees, power tests, symbols, etc. Wednesday evening: Dinner to Professor John E. Sweet, honorary member and past president, in celebration of his eightieth birthday and in recognition of his services to the engineering profession, given by his friends and members of the society.

Thursday morning, December 5: Simultaneous sessions under the direction of the sub-committees on Railroads, Iron and Steel and Cement Manufacture. Thursday afternoon: Sessions on the power plant, and on hydraulic and pneumatic apparatus, including centrifugal pumps, blowers and the measurement of flow of fluids. Thursday evening: Reunion and dance, with collation.

Friday morning, December 6: Session of the sub-committee on administration presenting a review of the present state of the art of management.

The list of papers for the machine shop session is a strong one and in-

cludes the results of tests and investigations as well as machine shop operations. At the textile session the valuation of property and the special requirements of power plants for textile mills are the subjects for discussion. The sub-committee on railroads have papers on train lighting, electric locomotives and the locomotive problem, and at the iron and steel session the most advanced achievements in iron and steel manufacture will be the subject. At the cement session the subjects of depreciation and obsolescence, and of accidents are to be treated.

The plans for the meeting of the American Society of Mechanical Engineers with the Verein Deutscher Ingenieure, which promises to be the most remarkable tour of the industries in Germany ever offered to American engineers, are being splendidly arranged. Mr. Conrad Matschoss, Dozent of the Royal Polytechnic High School of Berlin, has been visiting the United States as a representative of the German Society and has been conferring with the Committee of Arrangements regarding itinerary professional papers, etc.

In general, the date of the departure will be June 11, and the party will arrive in Germany on Saturday, June 21. Here the party will be received by the municipal authorities at point of landing and given an opportunity to visit the great shipyards before going on by special train to Leipzig the same or the following day. Sunday evening, the 22d, will be the occasion of an informal gathering to promote acquaintanceship, preceding the more formal opening on Monday, June 23. At this opening there will be a welcome by the King of Saxony and the municipal authorities of Leipzig, and two addresses, one by a representative of the German and the other by a representative of the American Society, which will be on general subjects, such as the history of engineering, the relation of capital and labor, and the effect on industry of technical education. Tuesday, the last day to be spent in Leipzig, will be devoted to technical papers and to various social events and participation in the patriotic gathering in commemoration of the battle of Leipzig, of which this year is the one hundredth anniversary.

The party will leave on Wednesday for a tour of industrial Germany, visiting the principal cities, such as Dresden, Berlin, Dusseldorf, Cologne, Frankfurt a.M., Nurnberg, Munich, etc. In all probability the Krupp works will be thrown open to the party, the Baroness von Bohlen (geborene von Krupp) receiving the visiting American engineers in person. The trip up the Rhine from Bonn to Rudesheim will be made by boat and at Rudesheim there will be a grand festival on the embankments. Independence Day will be celebrated at Frankfurt a.M. under the auspices of the American embassy.

The final meeting will be held in Munich July 7, in connection with the Museum of Technical Arts, of which

Dr. von Miller is the Director. It is expected that the Prince of Bavaria and the Mayor of Munich will also receive the party. The entire trip through Germany and the various official receptions are being arranged by a committee of the most important men of the Arts and Sciences in the German Society, and there is the keenest interest shown by municipal authorities and the heads of industrial establishments.

Rochester Engineering Society.

At the first meeting of the season of the Rochester Engineering Society, held Oct. 24 in the Hotel Seneca, Rochester, N. Y., Samuel P. Moulthrop spoke upon the subject, "The Early Days of Rochester."

Nearly 75 members were present. D. P. Falconer, President of the organization, delivered an address, in which he spoke of the good that is being accomplished by the engineering society of Cleveland, and urged the local organization to activity along certain specified lines. A committee was appointed on the Barge Canal harbor, another on the "Parallel to Main Street Problem," on parking automobiles, licensing of engineers, future extension of the city limits and other questions of public interest.

Colonel Samuel P. Moulthrop extended an invitation to the society to visit Washington Grammar School 26, of which he is the principal. The activity of the school is of interest to the engineering society in that one of its departments has decided to start young boys along the engineering profession.

Associated Engineering Societies of St. Louis.

The Associated Engineering Societies of St. Louis, including the Engineers' Club and its local branches, the A. S. C. E., the A. S. M. E., the A. I. E. E. and the A. S. E. C. held a joint meeting November 6, in the Engineers' clubrooms, 3817 Olive street. The meeting was under the auspices of the St. Louis section of the American Institute of Electrical Engineers. F. A. Barker, safety engineer for the Committee on Accident Prevention and Working Men's Compensation of the National Association of Manufacturers, gave an illustrated talk on "Accident Prevention."

A party of 125 members of the Engineers' Club and the Associated Engineering Societies left Union Station over the Burlington at 2.20 a. m., Saturday, November 9, for Keokuk, Ia., to visit the dam in the Mississippi River. The train arrived at 7.30 a. m. Hugh L. Cooper, chief engineer, of the construction work on the hydro-electric plant, showed the visitors the incomplete work.

Inland Water Works Association.

The members of this association consisting of officials and employees of the Spokane water department and of other towns and cities in the Inland Empire attended a banquet, November 2, in the Stone room of the Spokane Hotel, Spokane, Wash.

Association of the Mayors of Maryland.

A meeting will be held at the Fifth Regiment Armory, Baltimore, Md., November 19, for the purpose of forming a permanent organization of the mayors and borough presidents of Maryland municipalities. The movement grew out of a meeting of the mayors just before the last session of the legislature to unite upon certain legislative matters. At that time it was proposed that the association be made permanent, and a committee was appointed to arrange the matter. This committee has called the meeting for November 19, as it is purposed to have the mayors join in the meeting of the Associated Board of Trades of the state the next day.

Illinois State Electrical Association.

The annual convention of the association was held at Peoria, October 21-24. The following officers were elected: President, J. J. Frey, Hillsboro; first vice-president, F. H. Golding, Rockford; second vice-president, E. MacDonald; third vice-president, F. W. Reimers, Rock Island; fourth vice-president, H. Negley, Canton; treasurer, C. W. King, Lewiston; secretary, H. E. Chubbuck, Peoria; assistant secretary, C. A. Willoughby, Peoria.

W. B. McKinley, Champaign; F. J. Baker, Chicago; R. S. Wallace, Peoria; E. W. Smith, Kewanee, and H. A. Foster, Fairbury, were chosen members of the executive committee, which will determine the next place of meeting.

PERSONALS

Brockwell, Sherwood, Raleigh, N. C., has been appointed Chief of the Fire Department.

Clark, Waldo, Costa Rica, has been appointed resident engineer of the project to improve the harbor of New London, Conn. Mr. Clark was formerly city engineer of New London.

Dart, J. Vinton, Providence, R. I., connected with the City Engineer's department, has been appointed engineer in charge of the Highway Department.

Kraemer, Casper, West Hoboken, N. J., has been elected Chief of the Fire Department.

Johnson, Wm. J., Sacramento, Cal., has been appointed Chief of the Police Department.

Albright and Mebus, Civil Engineers, Philadelphia, Pa., have been appointed by the Waynesboro Water Co., Waynesboro, Pa., as engineers to report on and draw plans for the improvements to the water system.

Berlin, Melvin, Columbus, O., has resigned as chief engineer of the main water works pumping station.

Halbert, A. J., has been elected county road engineer for Hardin county, Kentucky, by the Hardin county Fiscal Court at Elizabethtown, Ky.

The following mayors have been elected:

Mississippi.
Prentiss—G. M. Molloy.
Ohio.
Northfield—L. M. Dalrymple.
Canton—Harry S. Schilling.
Rhode Island.
Providence—Joseph H. Gainer.
Woonsocket—R. P. Daignault (re-elected).
New York.
Watervliet—Edwin W. Joslyn.
Cohoes—John F. Scott.
Poughkeepsie—Wm. H. Frank.
Rensselaer—Frederick Rohloff.
Ogdensburg—Chas. D. Hoard.
North Tonawanda—J. A. Rafter.
Niagara Falls—Mr. Laughlin.
Connecticut.
Ansonia—Franklin Burton.
Stamford—Walter G. Austin.
New Jersey.
Elizabeth—Victor Mravlag.
Burlington—Elmer C. Anderson.
New Providence—Frederick Rubsamen.
Plainfield—Percy H. Stewart.
Perth Amboy—Mr. Garretson.
Spotswood—Arthur B. Appleby.
Newark—Jacob Haussling (re-elected).
South Amboy—Mr. Dey.
East Orange—Julian A. Gregory (re-elected).
Orange—Frank J. Murray.
Bloomfield—Wm. Hauser (re-elected).
Irvington—David H. Greene.
Montclair—Ernest C. Hinck (re-elected).
West Orange—Samuel A. Muta (re-elected).
Caldwell—John Esty.
Roseland—Chas. Braunworth.
West Caldwell—Caleb Harrison.
Harrison—Joseph P. Riordan (re-elected).
Allenhurst—William H. Duval.
Belvidere—Elmer C. Lockhard.
Boonton—Thomas Heaton.
Bradley Beach—Walter C. Parker.
Bridgeton—Arthur C. Whitaker.
Egg Harbor City—George Mueller.
Fair Haven—Frank Covert (re-elected).
Flemington—Dr. O. H. Sproul.
Freehold—Daniel P. Smith.
Gloucester City—Patrick Mealey.
Hackensack—Courtlandt Linkroom.
Hackettstown—Wallace Taylor.
Highlands—Harry H. Johnson.
Merchantville—Alfred K. Bennett.
Monmouth Beach—Jesse P. Manahan (re-elected).
Morristown—John J. Todd.
Phillipsburg—Joseph H. Firth (re-elected).
Red Bank—Abram L. Davidson.
Roselle Park—George H. Horning (re-elected).
Rock Hill—John Tilton (re-elected).
Vineland—Benjamin Stevens.
Westfield—Harry Wade Evans.
West Long Branch—Joseph D. Van Note.
Wharton—Ulysses G. Davenport.
Woodbury—M. F. Cattell.
Florida.
Hastings—B. L. Brown.

MUNICIPAL APPLIANCES

Firemen's Breathing Helmet Employing a Novel and Simple Principle.

The National Safety Device Company, Oberlin, O., have placed on the market a breathing helmet by means of which a fireman may live in an atmosphere charged with smoke and dangerous gases. The principle employed is so simple it is strange it never was thought of before. The helmet has a pipe attachment by which air for breathing purposes may be drawn from a point close to the



BREATHING HELMET.

ground. Actual trial has shown that even in a close room apparently filled with smoke and gases there is sufficient pure air close to the floor to allow a fireman using one of these helmets to breath and work in safety for a considerable length of time. As compared with the oxygen helmet with which it competes it has the advantage of lighter weight and as compared with some types freedom from long pipes. Besides, there is no mechanism to get out of order.

The helmet is made of canvas and can be put on in fifteen seconds. It weighs but four pounds and has nothing to tie, button or adjust. There are mica squares for admitting light. The helmet which is somewhat similar in appearance to a diver's hood, fits closely over the head and shoulders. From it trails a hose reinforced with spiral wire which reaches down to the floor and carries air to the wearer.

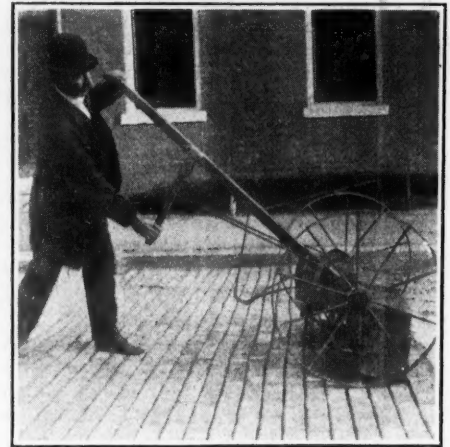
At a test made for the fire department of Cleveland, O., rags were burned in a room 8 by 12 feet, and formaldehyde was also burned. All doors and windows were closed. A demonstrator equipped with the hood entered the room and remained there fifteen minutes, when he was called out.

Paving Brick Cart.

The Sterling Pattern Works, Sterling, Ill., have placed on the market a hand cart for carrying paving bricks short distances. The cart is said to reduce the labor cost of paving a street with brick to a very appreciable amount. The carts have been used by a number of contractors this fall, all of whom give a good account of it. The cart consists of two iron wheels, 30 inches in diameter, with 2½-inch tires. From the axle are suspended one or two racks, consisting of a series of iron straps bent at a right angle to form the bottom of the carrier. The position of the racks is controlled by a lever attached to the cart-handle, by means of which the bricks are delivered where wanted. The carts are most handily loaded by means of brick tongs. The wheels have roller bearings. The whole cart weighs about 200 pounds.

Two styles of carts are made, each carrying 36 brick or 30 block. The No. 2 is designed to place the brick in two piles, each six brick wide

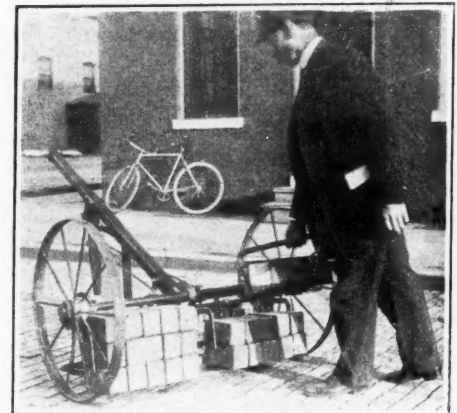
and three high. This is to accommodate a two-handed system of setting. In this case if desired the top courses may be reset by hand tongs, making three piles. Cart No. 1 leaves a solid



DUMPING THE CART.

pile, ten blocks long by 3 high. This cart is narrower than No. 1 and is suitable for single or two-handed systems of setting.

For a wide or moderately wide street the use of four carts is suggested, two for each side of the wagon delivering the bricks on the street. There should

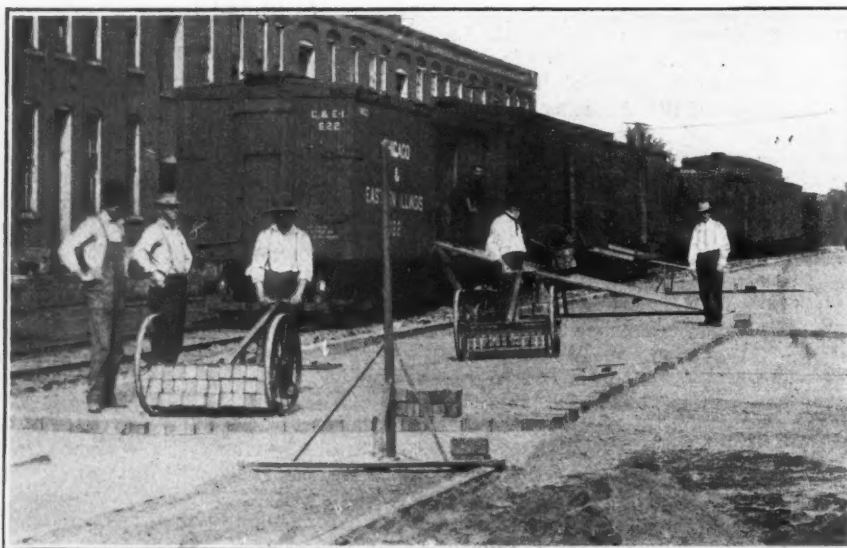


PLACING BRICKS IN TWO PILES.

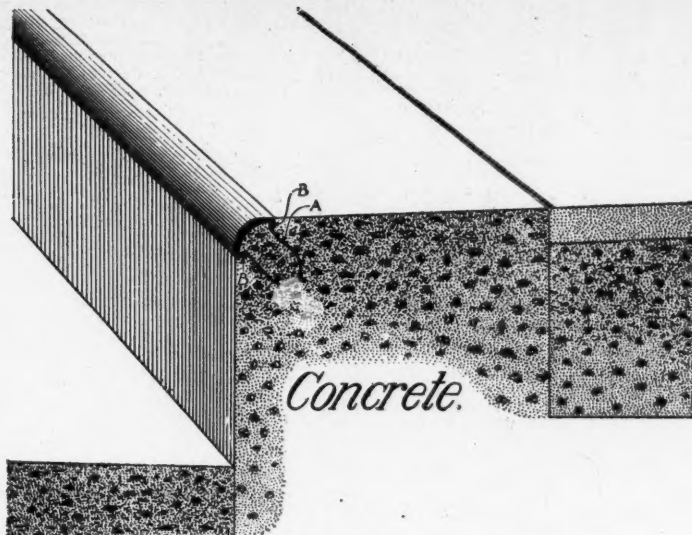
be two men loading and one man wheeling with each cart, one cart being loaded while the wheeler is placing the other. On a narrow street, three carts will answer with a man for a wheeler for both sides.

Clip-Bar Curb Guard.

The Clip-Bar Manufacturing Company, 2540 Olive street, Philadelphia, make a galvanized iron reinforcing bar used for protecting the edge of concrete curbing from abrasion and for similar purposes in other concrete structures, as steps and columns. As its name implies, a peculiar feature of the device is a strap of iron bent like a horseshoe, the ends of which fit into the bar and form the anchor in the concrete. The body of concrete in which the clip-bar is imbedded is massed solidly behind and in contact



TRANSPORTING PAVING BRICK WITH STERLING CART.



CONCRETE CURBING REINFORCED WITH CLIP-BAR.

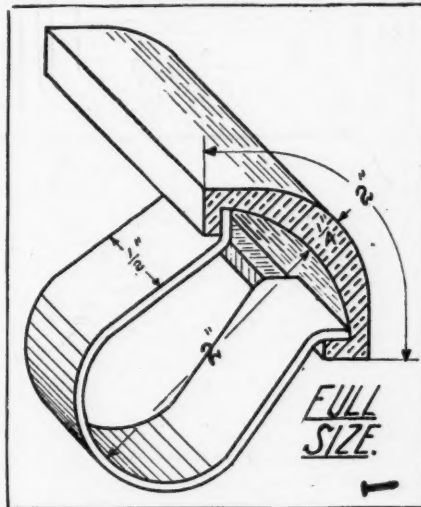
with the guard, passing through and entirely filling the clip anchor. The concrete also fills the space between the flanges, thus locking and binding the guard securely in the body of the structure, from which, it is claimed, it cannot be dislodged by blows, frost or expansion and contraction from changes in temperature.

In construction it has been found from practical experience entirely unnecessary to hold clip-bars in place while installing, by the aid of forms, machines or frogs. An ordinary cement worker can install the bars by simply setting them in place and flushing the soft concrete against the under surface and through the clips, filling the spaces between the flanges completely. In fact, it is said that the cost of setting the bar is no greater than that of rounding a similar edge without the bar.

The claims made for the clip-bar galvanized curb guard and concrete reinforcement are: Lightness of section; simplicity of installation; durability; large wearing surface; adds strength to the concrete; handsome appearance; proof against frost; not affected by expansion and contraction.

Frost Process Paving Brick.

The Frost Process Company, Commercial Bank Building, Chicago, are the owners of patents for a process



CLIP AND PROTECTING BAR.

and machinery for making a paving brick of maximum strength, raised lugs and round corners. As compared with the repressed bricks the Frost process

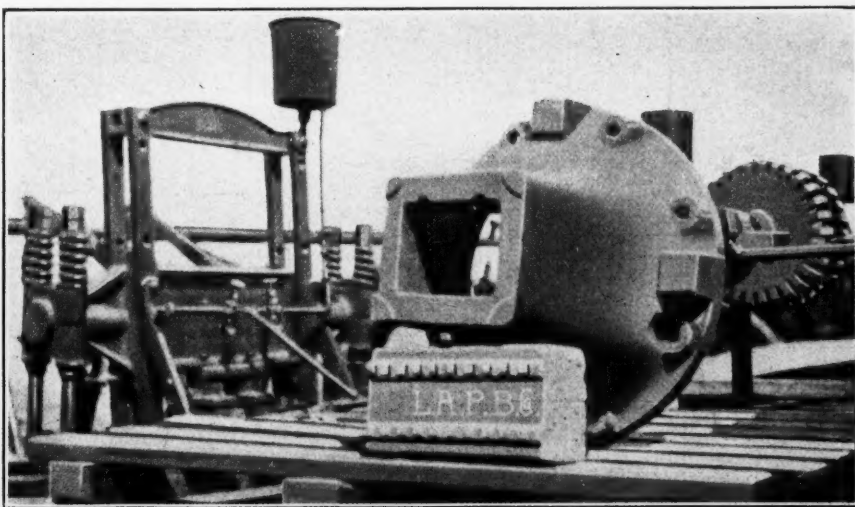
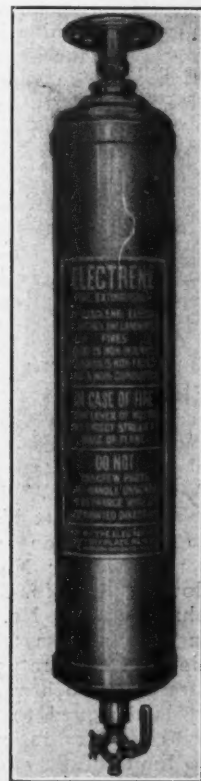
cess is claimed to save 40 to 50 cents per thousand in manufacture.

A round cornered die, shown in the illustration, with molding space provided for the lug ridges, is used in the auger machine as the brick comes through this die, the bar of the auger machine being pushed out turns the two wheel casting seen on the right in the cut attached to the auger machine. These wheels press down sections of the clay in the lug ridges, thus leaving the completed lugs on the brick, and the tread of the wheel molds on the face of the brick the name or trademark of the manufacturer. All of this is accomplished by the operation of the wheel casting at the time the bar is pushed out, and as this operation must take place on the auger machine anyhow, the result is the delivery of a round cornered brick with lugs complete, ready to go to the kilns without any further operation or labor cost. The manufacturers state their bricks made by the Frost process always show from 3 to 4 per cent. better results in the rattler test than are shown by repressed bricks.

Electrene Hand Fire Extinguisher.

The Electrene Company, Whitehall Building, New York City, manufactures a hand fire extinguisher of a type that seems to be a distinct improvement on others of its class.

The chemical which it contains will extinguish a gasoline fire or even an electric arc. The mechanical improvement over other extinguishers which accomplish the same result consists in the fact that the chemical liquid is ejected by air pressure. The usual pumping movement otherwise necessary for operation is eliminated. A simple turn of a valve allows the chemical to escape in a fine spray under a pressure that throws it a considerable distance. In an emergency, any one would naturally turn a faucet while they might not understand that a handle was a pump handle. The extinguisher Style A, illustrated, is constructed of heavy brass. The one quart size weighs seven pounds. It is noticeable that the operator by putting the cylinder under one arm has the other free to move obstructions, etc., or he can operate two extinguishers.



MACHINES USED IN MAKING FROST PROCESS BRICKS.

INDUSTRIAL NEWS

Cast Iron Pipe.—Routine business is good. Quotations: 4-inch, \$30; 6 to 12-inch, \$28; 16-inch and up, \$27. Birmingham. Several large orders have been received from western and southwestern territory. Quotations: 4-inch, \$25; 6-inch and up, \$23. San Francisco. There is plenty of business in prospect, and some substantial orders are expected before the end of the year. Quotations: 4-inch, \$38.50; 6 to 10-inch, \$36.50; 12-inch and up, \$36. New York. Private buying is less active for early delivery, but contracts for considerable quantities of small sizes have been entered for spring delivery and further inquiries are pending. Quotations: 6-inch, car loads, \$24 to \$25.

Lead.—Market is dull. Quotations: New York, 4.75c.; St. Louis, 4.60c.

Asphalt Plants.—Hetherington & Berner Co., Indianapolis, which built the local municipal asphalt paving plant, is completing the installation of the same kind of plant for Chicago. It is also building plants for Detroit and for Camden, N. J. The ownership of municipal asphalt plants has proved to be of great benefit to cities, and it is predicted that in time every city of 25,000 inhabitants or more will own and operate its own paving plant for the purposes of doing its own repair work. In Detroit the plant has been in operation for nine years under the charge of Clarence Proctor, asphalt expert from Washington, D. C. Each year's cost records in that city show a deduction of 10 per cent. allowed for depreciation of plant. At the end of next season the plant will stand on the city's books as free of cost, although it is said to be in good condition and will serve for several years to come.

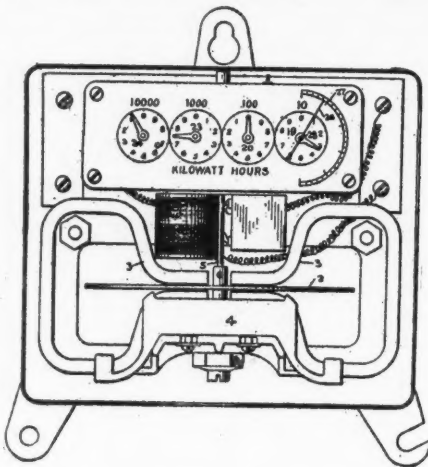
General Electric Bulletins.—Recent bulletins published by the General Electric Company, Schenectady, N. Y., are the following: No. A4039, direct current motor starting and speed regulating rheostats and panels; No. A4034 Type W long lip flame arc lamp, for street illumination, designed to operate on alternating current series circuits; No. A4004 G-E steam flow meters; No. 4858 Type K1 single-phase motors; No. 4974, current limiting reactance, a device for the protection of apparatus from mechanical stress due to heavy current overloads. It is designed to be placed in series with generators or transformers and to limit the flow of current in the circuit under short circuit conditions to values which can be safely withstood by both the generator and the transformer. No. A4036, direct current exciter panels for use in connection with alternating generator panels, when for any reason speed control of exciters is desired. They are designed for controlling exciters of capacities ranging from 5 to 100 kw. No. A4037, isolated and small plant switchboards for use with gasoline electric sets and for al-

ternating and direct current. While designed primarily for use with the company's gas-electric generating sets, they are suitable for use in any generating units of the same rating and are intended for small lighting plants.

PATENT CLAIMS

1,042,847. **ELECTRIC METER.** Mathias E. Turner, Cleveland Heights, Ohio. Serial No. 425,368.

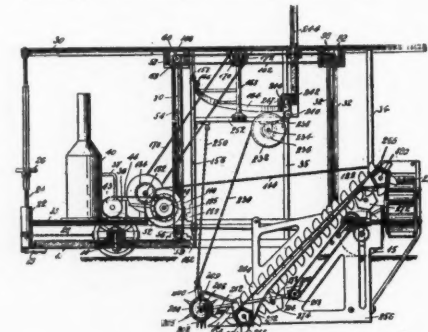
The combination, with a meter having a dial plate and a gear train in the rear of said dial plate, a maximum indicator comprising a shaft extending through said dial plate, a pointer carried by the forward end of said shaft, a rotatable gear mounted in the rear of said dial plate, driving connections between said gear and said shaft whereby said shaft will be rotated when said gear



revolves in a forward direction and will be left stationary when said gear rotates rearwardly, a gear operated by the meter train and adapted to rotate said first gear in a forward direction, means for separating said gears at predetermined time-intervals, and means operative during such separation to set said first gear to zero position.

1,042,997. **MACHINE FOR DIGGING TRENCHES.** Salute Belanger, Salem, Mass. Serial No. 660,493.

A trench digging machine, having in combination, a slidably mounted frame provided



with a series of spikes at its lower end, a pivotally supported frame having spikes depending therefrom, and means for intermittently raising said frames.

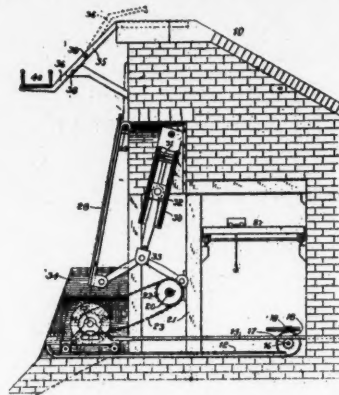
1,042,571. **SHEET-METAL PILING.** Trygve Larssen, Bremen, Germany, assignor to The Firm of Deutsch-Luxemburgische Bergwerks- und Hütten-Aktiengesellschaft, Bochum, Germany. Serial No. 690,823.



cross-section, facing alternately in opposite directions and provided at each junction with an integral interlocking S-shaped flange, the web of said flange having an integral hooked projection adapted to interlock with a flange abutting against said web.

1,042,381. **DAM AND HYDRAULIC-POWER TRANSMITTER.** William H. Baker, Bridgeport, Conn. Serial No. 681,091.

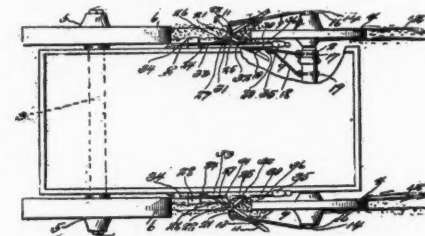
A structure of the character described comprising a dam for protecting the crest and face of a precipice, said dam having a cham-



ber built therein, a carriage in said chamber, a water wheel mounted on the carriage, means for moving the carriage and wheel into and out of operative position and a swinging deflector to regulate the amount of water that can come in contact with the wheel.

1,042,450. **ROAD-SCRAPER.** Elisha R. Kerr, Erin, Tenn. Serial No. 641,292.

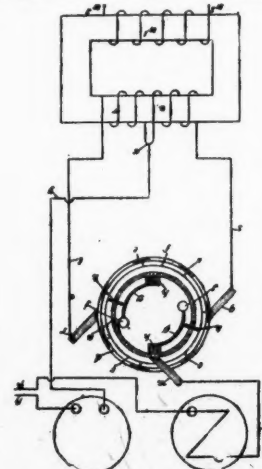
In combination, a frame having an axle, wheels journaled on the spindles thereof, scraper frames suspended pivotally from the axle and the spindles, each scraper frame comprising rearwardly and downwardly partially converging bars having a transversely disposed bar integrally connecting them, the rearwardly and downwardly partially con-



verging bars having triangular members connected thereto and extending downwardly, and scraper shoes, one secured to the lower apex of each member, these shoes being arranged angularly with relation to one another, and correspondingly like mechanisms on each side of the first frame for individually and independently raising and lowering each of the scraper frames.

1,042,446. **APPARATUS FOR TRANSFORMING CONTINUOUS CURRENTS INTO ALTERNATING CURRENTS.** Edward Lionel Joseph, London, England. Serial No. 662,178.

In apparatus for transforming continuous currents into intermittent currents, a motor



driven commutator made up of a slip ring section and a segmental section, insulated from one another, and speed controlled means automatically actuated to electrically connect the two commutator sections.

THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Concrete Work—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards.

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we cannot guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also correction of any errors discovered.

BIDS ASKED FOR

STATE	CITY	REC'D UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREETS AND ROADS				
New York	Fort Slocum	Nov. 16, 10 a.m.	Constrn. roads, walks and gutters	J. C. McArthur, Capt. Q. M.
Virginia	Harrisonburg	Nov. 16	Constrn. road	A. S. Heatwole, Comr.
Indiana	New Castle	Nov. 16, 10 a.m.	Constrn. gravel roads	County Comrs.
Mass.	Boston	Nov. 18, noon	Constrn. tar macadam 3 sts.	L. K. Rourke, Comr. Pub. Wks.
California	Glendale	Nov. 18	Constrn. 15,000 sq. ft. cement walk	G. B. Woodbury, City Clerk.
California	Sacramento	Nov. 18, 2 p.m.	Constrn. 13 miles cement concrete and bit. surface, Santa Clara; constrn. 3 miles macadam with asph. surface in San Mateo; constrn. 11 miles concrete and bit. surface in Butte; constrn. 14 miles concrete and bit. surface in Merced; constrn. 6½ miles State highway in Mendocino; constrn. 10 miles concrete and bit. surface in San Diego; constrn. 6½ miles concrete and bit. surface in San Luis Obispo	California Highway Com.
Missouri	Webb City	Nov. 18	Constrn. 2,000 ft. cement curb & gutter	E. W. Robinson, City Engr.
Ohio	Springfield	Nov. 18	Constrn. roads	H. V. Long, Ch. Freeholders.
Pennsylvania	Harrisburg	Nov. 19, 10 a.m.	Constrn. 4,500 lin. ft. brick paving	E. M. Bigelow, St. Hwy Comr.
Ohio	Cleveland	Nov. 19, noon	Improving road and constrn. sidewalks	H. H. Canfield, Clerk.
New Jersey	Long Branch	Nov. 20, 10 a.m.	Constrn. concrete and brick gutters	J. W. Seaman, City Engr.
Ohio	Cleveland	Nov. 20, 11 a.m.	Improving road	J. F. Goldenbogen, Clk. Co. Bd.
New York	Brooklyn	Nov. 20, 10 a.m.	Constrn. asphalt pavements	A. E. Steers, Boro. Pres.
Maryland	Baltimore	Nov. 20, 11 a.m.	Constrn. sheet asphalt, bit. concrete, granite and brick pavement	Board of Awards.
Indiana	Shelbyville	Nov. 21	Constrn. 5,800 yds. gravel	F. W. Fagel, Co. Aud.
New Jersey	Flemington	Nov. 21, 11 a.m.	Imp. roads	A. W. Muirhead, Dir.
Ohio	Cincinnati	Nov. 22, noon	Constrn. culvert and macadamizing road	S. Struble, Pres. Comrs.
Kansas	Topeka	Nov. 22	Constrn. 2 brk. & one concrete pavement	Co. Comrs.
Nebraska	Lincoln	Nov. 22	Constrn. brick or asph. road, cost \$12,000.	H. E. Wells, Co. Clerk.
New York	New York	Nov. 23, 11 a.m.	Constrn. granite block paving	H. R. Stanford, Chief Clerk, Washington, D. C.
Texas	Houston	Nov. 25, noon	Paving McGowen ave.	H. B. Rice, Mayor.
Nebraska	Grand Island	Nov. 25, noon	Constrn. 2½ miles road	H. W. Kibbey, Co. Engr.
California	Los Angeles	Nov. 25	Constrn. asphalt pavements	Board of Supervisors.
Alabama	Ashland	Nov. 26, noon	Grading road	County Comrs.
Delaware	Newcastle	Nov. 26, noon	Constrn. macadam roads	F. A. Price, Comr.
Mississippi	Oxford	Nov. 30, noon	Constrn. 15 miles gravel and macadam and grading 10 miles road	County Road Comrs.
Arkansas	Fort Smith	Dec. 1, noon	Constrn. 4,100 yds. pavement	Bd. of Impt. Dist. 8.
Indiana	South Bend	Dec. 2, 11 a.m.	Constrn. gravel in macadam roads	C. Sedgwick, Co. Aud.
Illinois	Berwyn	Dec. 3, 8 p.m.	Constrn. macadam, cost \$5,800	W. V. Aikman, Sec. B. L. I.
Ohio	Columbus	Dec. 3, 2 p.m.	Constrn. 2.27 miles brick	J. R. Marker, St. Hwy Comr.
Florida	Ocala	Dec. 3	Constrn. brick pavements	J. D. Robertson, Mayor.
Kentucky	Pikeville	Dec. 9	Constrn. 25,000 yds. paving	Stoney Amick, City Engr.
Florida	Fernandina	Dec. 18, 3 p.m.	Furn. material for 11,000 sq. yds. brick pavement	G. L. Baltvell, City Clerk.
SEWERAGE				
Illinois	Petersburg	Nov. 18, 8 p.m.	Constrn. sewer system	H. M. Levering, Mayor.
Alabama	Florence	Nov. 18, 7.30 p.m.	Constrn. storm water sewer	J. B. White, City Clerk.
Texas	San Benito	Nov. 18, 8 p.m.	Constrn. about 3,300 ft. 8 to 18-in. pipe & two disposal plants	J. M. Breen, Mayor.
Ohio	Canal Dover	Nov. 19, noon	Constrn. 19,000 ft. 8 to 15-in. tile sewers	J. J. Jurgens, Clk. Dir. Pub. Ser.
New Jersey	Paterson	Nov. 19, 4 p.m.	Constrn. 9,600 ft. 8 to 15-in. pipe sewers	T. S. Standeven, Clk. Bd. P. W.
Wisconsin	La Crosse	Nov. 20	Constrn. pumping station, 5 sub-stations, disposal plant, two reservoirs	Bd. Pub. Wks.
Florida	Live Oak	Nov. 21	Constrn. sewer system	W. H. Lyle, Chrmn. Trustees
Ohio	Newburg Heights	Nov. 23	Constrn. sewer and water main	H. W. Shimek, Clk. Bd. Control.
Texas	Houston	Nov. 25	Constrn. 37,000 ft. 8 to 24-in. pipe sewer	H. B. Rice, Mayor.
Iowa	Lyon	Nov. 29	Constrn. 2½ miles 8 to 24-in. clay pipe	J. D. Thorn, City Engr.
Florida	W. Palm Beach	Dec. 3 (re-ad)	Con. 22,000 ft. conc. pipe & septic tank	A. M. Lopez, Clerk.
Iowa	Tipton	Jan. 15	Constrn. sewers	P. D. Ketelsen, City Clerk.
WATER SUPPLY				
Ohio	Salem	Nov. 16, noon	Constrn. addition to pumping station	D. H. Rummel, Dir. Pub. Ser.
New York	Pleasantville	Nov. 18, 7 p.m.	Constrn. 500,000 gal. reservoir and 3,000 ft. 10-in. c-i. pipe	W. H. Jahne, VII. Clerk.
Canada	Bassano, Alta.	Nov. 18, 8 p.m.	Constrn. pump shaft, intake pipe, power house, stand pipe, deep well pump, boilers, &c.	G. B. R. Bond, Sec.
Wisconsin	La Crosse	Nov. 18	Constrn. 6,600 ft. c-i. pipe, two Ventura meters	Bd. Pub. Wks.
Canada	Dunnville	Nov. 18, 9 p.m.	Furn. turbine pump for fire purposes	A. M. Jackson, Supt.
Ohio	Cleveland	Nov. 18	Furn. Venturi meters	W. J. Springborn Dir.
Ohio	Cleve. Heights	Nov. 19, noon	Constrn. 6-in. main	H. H. Canfield, Clerk.
Michigan	Big Rapids	Nov. 20, 2 p.m.	Constrn. hydraulic power house sub-struc.	H. J. Ward, Pres. Bd. Pub. Wks.
New York	New York	Nov. 20, 2 p.m.	Furn. and delivering water pipe	G. S. Williams, Ann Arbor.
Wisconsin	La Crosse	Nov. 22	Furn. 8,000,000 gal. pumping engine, also 5 centrifugal pumps	H. F. Thompson, Comr.
Ohio	Euclid	Nov. 25	Constrn. mains in several sts.	Bd. Pub. Wks.
				F. H. Schoaff, VII. Clerk.
				F. A. Pease, Engr. Co., Cleveland.

BIDS ASKED FOR

STATE	CITY	REC'D UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
Washington.	Seattle.	Nov. 27, noon.	Constrn. water mains	C. E. Remsberg, Sec.
British Col.	Kerrisdale.	Dec. 2, 5 p.m.	Furn. 33 miles 4 to 12-in. steel pipe at Point Grey	B. A. Cunliffe, City Clk.
Illinois.	Berwyn.	Dec. 3, 8 p.m.	Constrn. water service pipes	W. A. Aikman, Sec. Bd. L. I.
So. Dakota.	Hot Springs.	Dec. 4, 1 p.m.	Constrn. water tank	W. H. Stanley, Treas., Battle Mt. Sanitarium.
Louisiana.	New Orleans.	Dec. 12, noon.	Installing mechanical draft apparatus.	F. S. Shields, Secy.
California.	Tehachapi.	Dec. 30.	Constrn. water works, cost \$16,000.	F. A. Lathrop, Engr. Los Angeles.
Alabama.	Gadsden.	Jan. 1.	Constrn. stand pipe	Bellevue Highland Co. A. J. Greffencamp, Engr., Gadsden, Ala.
Illinois.	Decatur.	Jan. 1.	Constrn. filtration plant, cost \$95,000.	City Clerk.
Oregon.	Milton.	Jan. 1.	Constrn. 3,000 ft. 40-in. wood stave pipe.	W. G. Clark, Engr., Toledo, O. L. E. Coyle, Mgr.
LIGHTING AND POWER				
Illinois.	Summit.	Nov. 18.	Install. lighting system complete for 235 street lamps	Jas. Johnson, Vil. Clerk.
Michigan.	Sioux Ste. Marie.	Nov. 19, noon.	Constrn. arc lighting system	M. M. Patrick, Lt. Col. Engrs., Detroit.
Illinois.	Chicago.	Nov. 20, noon.	Furn. station apparatus for operating tungsten lamps	South Park Comrs.
Canada.	Humboldt.	Nov. 21, 8 p.m.	Constrn. power house, 2 boilers, engine, lighting system	C. W. Andreason, Mayor.
Nevada.	Fallon.	Nov. 21.	Furn. gates, valves and operating mach.	U. S. Reclamation Service.
Wisconsin.	La Crosse.	Nov. 22.	Furn. two turbo generators & condensers, 5,100 ft. transmission line, boilers, switch boards, traveling crane, etc.	Bd. Pub. Wks.
Canada.	Toronto.	Dec. 10.	Furn. and installing 1 or more 18,000,000 gal pumping engine	H. C. Hocken, Mayor.
FIRE EQUIPMENT				
Michigan.	Monroe.	Nov. 18.	Furn. motor-driven chem. hose wagon.	Jacob Kull, Chief Fire Dept.
Pennsylvania.	Johnstown.	Nov. 21, 8 p.m.	Furn. combination chem. and hose wagon.	Fire Com.
Rhode Island.	Woonsocket.	Nov. 23, 5 p.m.	Furn. motor-driven aerial truck	F. X. Berard, Chrmn. Com.
New York.	New York.	Nov. 26, 10.30 a.m.	Furn. motor-driven hook and ladder trucks as follows: 8 75-ft., 1 85-ft., 17 65-ft.	Josh. Johnson, Fire Comr.
Iowa.	Defiance.	Jan. 1.	Furn. hose cart and fire hose.	Town Council.
BRIDGES				
Ohio.	Akron.	Nov. 25, 10.30 a.m.	Constrn. superstructure	C. L. Bower, Co. Clerk.
Ohio.	Cincinnati.	Nov. 29, noon.	Imp. road and constrn. culverts	S. Struble, Pres.
Indiana.	Terre Haute.	Dec. 1.	Constrn. two concrete bridges	R. E. Gibbons, Co. Survey.
MISCELLANEOUS				
Canada.	Scudder.	Nov. 16, 6 p.m.	Constrn. 26 miles tel. line on Pelee Island.	J. E. Quick, Reeve.
Ohio.	Youngstown.	Nov. 16, noon.	Constrn. retaining walls and steps	W. H. McMillin, Clk.
Canada.	Scudder.	Nov. 18, 3 p.m.	Constrn. 24 miles telephone line	J. E. Quick, Reeve.
Mass.	New Bedford.	Nov. 18, 2.30 p.m.	Furn. 3,000 lbs. white lead, 60 gals. lin. oil.	F. P. Richmond, Chairman.
New Jersey.	Long Branch.	Nov. 20, 10 a.m.	Repairing jetties and refilling walk.	J. W. Flock, Dir. Parks.
Kentucky.	McKee.	Nov. 25, 4 p.m.	Constrn. jail	J. W. Mullins, Chrmn. Com.

STREETS AND ROADS

Glendale, Cal.—Sum of \$10,000 has been voted for purchase of streetmaking machinery.

Los Angeles, Cal.—Proposed widening of Griffin ave., from Ave. Twenty-eight to Montecito Park, will be proceeded with as petitioned for, according to recommendations of committee.

Oakland, Cal.—Resolutions have been adopted by City Council upon recommendation of Commissioner of Streets William J. Baccus as follows: Directing City Engineer and City Attorney to prepare resolution of intention for widening Ninth ave., from Foothill boulevard southerly. Adopting plans and specifications for sidewalking Raymond st., between Sixty-sixth st. and Alcatraz ave. Adopting plans and specifications for sidewalking East Twentieth st., between Seventeenth and Eighteenth avenues. Adopting plans and specifications for sidewalking Fifteenth ave., between East Sixteenth and East Nineteenth sts. Adopting plans and specifications for sidewalking East Valdez st., between Railroad ave. and Dennison st. Adopting plans and specifications for sidewalking East Fourteenth st., between Twenty-fifth and Twenty-sixth aves. Adopting plans and specifications for sidewalking Twenty-sixth st., between Chestnut and Linden sts.

Pasadena, Cal.—City Clerk has been instructed to advertise for bids for street sweeping and flushing.

Sacramento, Cal.—Plan is being considered for opening of E st.

Santa Ana, Cal.—Orange County has placed herself on record in favor of additional good roads by voting bond issue of \$1,270,000.

Wilmington, Del.—Bids will be received by Daniel Thompson, Chairman of Finance Committee, until 12 o'clock, Nov. 19, 1912, at office of Levy Court, in the Court House, in city of Wilmington, for purchase of all or any part of \$80,000 coupon highway improvement bonds of New Castle County.

Washington, D. C.—Report from American Consul states that general business firm in his district wishes to purchase American rock-crushing machinery. References will be furnished to interested firms. No. 9874, Bureau of Manufactures.

Bradentown, Fla.—Bradentown has voted in favor of further bond issue of \$10,000 for public improvements by majority of 130 in favor of and 21 against. Money will be used in paying additional streets, constructing new bridges across Jacques' and Weir's Creeks, extending sewer system and enlarging water works plant.

St. Augustine, Fla.—Opening of Spanish st. is being discussed.

Atlanta, Ga.—Regrading of Ivy st. is planned.

Lagrange, Ga.—Paving and sidewalking of Depot st., which has just been started by City Council at cost of about \$5,000, is among last of street improvements to be made during this season by La Grange authorities. Plans are being made for widening of Greenville st. and grading of Vernon st., which improvements will be done next summer.

Chicago, Ill.—A City bond issue of \$1,750,000 for purpose of paying portion of cost chargeable to city for widening and improving Twelfth st., from South Michigan ave. to South Ashland ave. has been authorized.

Muncie, Ind.—Ordinance appropriating sum of \$1,657.50 to be turned over to Treasurer of Center Township by Treasurer of Delaware County for purpose of improving Yorktown pike and Kilgore ave. has been passed.

Muncie, Ind.—Council has approved of ordinance appropriating sum of \$2,500 for use of Street, Alley and Sewer Department.

Clinton, Ia.—Plans for "Dolarway" paving on Fifth ave., from Fifth st. to Bluff blvd., have been filed, in addition to City Engineer's plans for asphalt, concrete and brick paving, heretofore filed. The "Dolarway" paving is of concrete with asphalt topping.

Leavenworth, Kan.—Ordinance providing for regrading and paving of east and west alley in block 14, Fackler's Addition, has been approved and passed. Clerk has been instructed to advertise for bids.

Topeka, Kan.—Extensive alley paving is being planned for 1913.

Winchester, Ky.—Paving of part of Main st. and various streets has been planned.

Lynn, Mass.—Municipal Commissioners have passed order for widening of Lynnfield st.

Taunton, Mass.—Order authorizing and directing City Engineer to prepare plans defining boundaries of Main st., Broadway, City square, Weir st. to Mill River, Cohannet st. to Mill River, and Winthrop st. to Mill River has passed to second reading.

Kalamazoo, Mich.—The Texas Township Good Roads Association has circulated petition which will be presented to Township Board of Supervisors requesting that they have built portion of road running between Kalamazoo and Oshtemo.

Saginaw, Mich.—A good roads progressive movement is being discussed.

St. Paul, Minn.—Two bids, each for 28 cts. a cu. ft., have been rejected by Board of Water Commissioners for grading ground in Hamline ave., between Marshall and St. Anthony aves. Committee of two board members and Superintendent House, have been selected to get lower bids. Engineer's estimate for work is 20 cts. a cu. yd. About 1,500 cu. ft. are to be graded.

Avon, N. J.—Mayor John Bingham has appointed committee to seek aid of State Road Department in paving of Main st. through borough.

Jersey City, N. J.—Finance Board has voted \$10,000 to repair Richard st., Hatch ave., Brown pl. and Swampy Creek sewer.

Westfield, N. J.—Ordinances to lay sidewalks in Clark st. alongside Randolph Perkins property and on north-east side of Lawrence ave., from Thompson property to Miller property, and to

lay walk in Westfield ave., from Washington st. to Pearsall property, have been passed on final readings by Town Council. Ordinance to improve section of Willow Grove road has also been passed on its final reading.

Albany, N. Y.—Unofficial returns from up-State counties received in Albany indicate that proposal to bond State for additional \$50,000,000 to continue work of improving highways has been adopted at election. Monroe County is reported to have favored bond issue by more than 10,000. In Franklin majority was 7,000, in Broome 4,000, Chemung 4,000, Yates 1,200.

Fulton, N. Y.—Improvement of streets is being considered.

Manhasset, L. I., N. Y.—Taxpayers of North Hempstead have decided to spend \$109,500 for road improvements.

North Tonawanda, N. Y.—Word has been received from State Highway Commissioner's Department that three proposed state roads in North Tonawanda will be among roads to be constructed next year. Tonawanda is allotted two miles and North Tonawanda five miles under present plans of commission.

Rochester, N. Y.—Building of new street parallel to Main st. is being considered.

Rochester, N. Y.—Board of Estimate and Apportionment has authorized purchase of land between North Water and Front sts. for widening of Central ave.

Seneca Falls, N. Y.—Sum of \$20,000 of bonds have been sold for paying village's part of street improvement expense on Clinton, Rumsey and West Fall sts.

Syracuse, N. Y.—Steps leading to construction of two new county roads have been taken at meeting of Board of Supervisors. County Superintendent of Highways F. E. Bogardus was authorized to prepare plans and specifications for improvement of Seneca turnpike, from city line at East Onondaga to village of Jamesville, distance of about 4 miles. Plans for Salina-Clay road, running from the Woodward station to county line at Schroepel's bridge, near Euclid, known as old Morgan road, have been referred to the Highway Committee.

White Plains, N. Y.—At coming village election voters will have chance to vote on proposition of bond issue of \$63,000 for village's share of cost of improving Post road, South Broadway and Westchester ave.

Bowling Green, O.—Hayden, Miller & Co., Cleveland, have been awarded \$50,000 worth of five per cent. stone road bonds by Wood County Commissioners.

Canton, O.—Petition for paving of Canton-Canal Dover road from Tuscarawas county line to south end of macadam road near Howensine bridge, has been received by County Commissioners.

Clyde, O.—Council has sold \$14,000 bonds to pave Maple st.

Dayton, O.—Council has passed ordinance providing for paving of Grand ave., from Salem ave. to Broadway.

Hamilton, O.—All bids for construction of road and bridge at Minton Farm, in Hanover township, have been rejected by County Commissioners, and Engineer Dillon has been instructed to prepare new plans.

Kenton, O.—Street paving bonds to amount of \$18,000 have been sold by Board of Sinking Fund Trustees to the Hayden-Miller Co., of Cleveland.

Lisbon, O.—State Deputy Highway Commissioner E. W. Smith and Commissioners Walker, McCammon and Kannal have mapped out line of cross county roads which if built according to plans will give Columbiana County at least 100 miles of additional paved road and best thoroughfares in State of Ohio.

Massillon, O.—Stark County surveyors, working under the direction of Commissioners, have completed survey of nearly 4 miles of Wooster road between end of present paving in West Brookfield, through East Greenville, to Wayne County line, and contract to pave stretch will be advertised early next year. Exact length of roadway to be paved by Stark County is 20,720 ft.

Toledo, O.—Paving Jefferson ave., between Ontario st. and Collingwood ave. is recommended, also widening of pavement between Eleventh and Seventeenth sts.

Youngstown, O.—Resolution has been adopted for grading Ashland ave., between Oak and Emma sts.

Youngstown, O.—Mahoning County will be an important link in inter-county system of State highways and will have some new improved roads throughout its entire length, if plan which

State Highway Commission is working up under Governor Harmon's direction to present to Legislature is adopted by that body at its meeting in January. This system will include between 9,000 and 10,000 miles of improved roads all over State, connecting every important city and tapping rural districts.

Youngstown, O.—Resolution has been passed to pave Powers way from Poland ave. to end of present paving.

Eugene, Ore.—Ordinance has been passed for grading and graveling Almaden st., from Eighth to Eleventh.

Philadelphia, Pa.—The \$7,000,000 municipal loan bill has been carried, of which about \$2,000,000 will be for street improvements.

Washington, Pa.—County Commissioners are advertising road bonds to amount of \$100,000. Sale of these bonds will raise total of road bond issues in Washington County to \$1,220,000.

Washington, Pa.—Following roads have been approved by Grand Jury and court, but no contracts have been let for their construction: West Alexander, 2 miles, estimated cost \$38,401.54; McDonald-Shaw Mine, 2 miles, \$54,309.20; Houston-West Middletown, 1.3 miles, \$21,963.30; Finleyville-Thomas, 1.5 miles, \$25,303.92; Beallsville-Zollarsville, 1.1 miles, \$24,589.23; Claysville-Bethany, 1.4 miles, \$22,864.65; Williamsport Pike, 9.7 miles, \$110,000; Washington-Burgettstown, 3 miles, \$62,239; Bellevue road, .4 mile, \$7,427.64; Cecil-Venice, 3.2 miles, \$53,077.75; Washington-Bethany, .34 miles, \$64,600; Washington-Washington Cemetery, .6 mile, \$8,552.50; Robbs Run, 8 miles, \$13,462.16; Midway-Stuebenville Pike, 4 miles, \$78,017.50; Hill Church-Eighty-four, 5.8 miles, \$112,959; Pike Run road extension, 4.5 miles, \$99,000; Canonsburg-Thomas, 2.8 miles, \$57,194.50; Westland road, 4 miles, \$76,409.30; Claysville-Burnsville, 2.8 miles, \$60,904.25; Beallsville-Fredericktown, 3.6 miles, \$7,351.50; Avella-Cross Creek, 4.8 miles, \$96,371. Totals, 62.7 miles, \$1,158,997.94. Estimates for these roads do not include engineering, supervision and extras. According to Controller Moffitt's last report actual cost of county roads is about 25 per cent. more than estimates.

Knoxville, Tenn.—The new road to Straw Plains, via Rutledge pike, when built will shorten distance between Knoxville and Straw Plains five miles. W. B. Hatcher, clerk of road commission and G. W. Pearsoll, County Engineer, have made survey for road to lead from Rutledge pike to McBee's ferry, at Straw Plains.

Knoxville, Tenn.—Ordinance has been presented to issue \$8,000 bonds to pay for paving of Oklahoma ave.

El Paso, Tex.—With the adoption of ordinance ordering paving of Tularosa st., from Piedras to Stevens, order was passed instructing City Clerk to advertise for bids on work.

Forth Worth, Tex.—Petition for grading and graveling of Edward st. has been presented to City Commissioners by citizens of that thoroughfare.

San Antonio, Tex.—City fathers have decided to purchase street sweeper.

San Antonio, Tex.—Property owners are urging City Council to pave East Commerce st., through to New Braunfels ave.

Sherman, Tex.—The Sherman City Council has announced that vitrified brick will be used in paving of all of business section of Sherman, and that asphaltic concrete will be used on North and South Crockett sts. Rock asphalt will be used in completing paving of South Travis st., this being kind used on work already completed. City will pave eight miles in city limits.

Everett, Wash.—Commissioners Thompson, Brodeck and Christenson have passed resolution prepared by Engineer Hoover for improvement of western end of Hewitt ave.

Everett, Wash.—Commissioners have passed resolution advertising for bids for laying of cement sidewalks and concrete road paving on Warren st. and Laurel drive to Vernon ave.; Warren st. to Thirty-third st. and Vernon av. to Laurel drive, all in Rucker Park district.

CONTRACTS AWARDED.

Birmingham, Ala.—On account of being unable to comply with specifications of city, the McCartin Contracting Co. relinquished its contract to lay wood block pavement on downtown streets. The Southern Asphalt & Construction Co. was given the contract by city.

Maplesville, Ala.—By State Highway Commissioners at Montgomery, contracts for constructing highway in Chil-

ton County, to J. G. Brown, of Montgomery, for \$8,000.

Eagle Rock, Cal.—By Town Trustees, to W. J. Taylor, Story Bldg., Los Angeles, at \$6,000, for improving various streets.

Fresno, Cal.—By City Council, to Thompson Bros., at \$13,971, for improving Stanislaus ave., and to California Road & Street Improvement Co., at \$14,632, for improving Blackstone ave.

Santa Monica, Cal.—Contracts are signed for more than \$200,000 worth of street paving in Santa Monica, work to be commenced at once. Santa Monica boulevard is to be paved with asphalt from Ocean ave. to easterly city limits by Braun, Brvant & Austin, of Los Angeles, and Fourteenth, Fifteenth, Sixteenth and Seventeenth sts. and Idaho and Washington aves. all paved by P. N. Snyder Company, of Los Angeles.

Hartford, Conn.—By Highway Commissioner James H. MacDonald contracts for work on state highways as follows: Town of Windham, 9,569 lin. ft. of gravel construction on the Bricktop road extending from the end of the present gravel road to the crossroads at Windham Center, to the A. Vito Construction corporation of Thompson, \$1.39 per lin. ft. for the gravel construction and \$2.39 per ft. for the telford road complete. Town of Woodstock, 16,860 lin. ft. of gravel construction on the Woodstock-Southbridge road to a point north of the Woodstock postoffice, to the Curran corporation, Middletown, \$1.47 per lin. ft. for gravel and \$2.15 per ft. for the telford road complete. Town of Ridgefield, 5,904 lin. ft., gravel construction on the South Salem road, from West Lane to the New York state line, to F. J. Kellogg, Danbury, 2.20 per lin. ft. for gravel and \$2.60 per lin. ft. for telford construction complete. Town of Hadam, 2,775 lin. ft. of macadam construction on the Higanum Station road to the Curran corporation, Middletown, \$1.69 a lin. ft. for macadam and \$2.15 a lin. ft. for finished telford road. Town of Norwich, 9,026 lin. ft. of macadam and gravel construction on the Norwich-Baltic road, beginning at the north end of the road built in 1909 and extending to the Sprague town line, to Ahern Brothers, Willimantic, \$2.45 per lin. ft., for macadam, \$3.15 a lin. ft. for telford construction, \$1.24 a lin. ft. for gravel construction. Town of Wildsors Locks, 3,300 lin. ft. of special tar-macadam construction on Main st. from the end of the present macadam road to a point 300 ft. north of Grove st., to A. D. Ambrosia, Hartford, \$4.92 a lin. ft. for special macadam with a telford base. This contract takes care of a very low and muddy section of road through the center of the town and with the tar-macadam construction will produce a fine road. Town of Bethel, 6,024 lin. ft. of macadam construction on Center st., Greenwood and Diamond aves. and Grassy Plain sts., from Chestnut st. to a point 200 ft. beyond Fleetwood ave., to Goodman and Trumbull, Litchfield, \$2.18 per lin. ft. for macadam-telford construction complete. Town of Canterbury, 9,808 lin. ft. of graded construction on the Worcester Turnpike from the Brooklyn town line to a point 200 ft. south of Patrick Shea's house, to D. L. Chilson, Franklin, Mass., \$16,933 for the entire grading and \$1 per lin. ft. extra for telford base.

Kissimmee, Fla.—For construction of sidewalks to H. S. Jaudon Engineering Co. of Savannah, Ga., at \$1.09 per yd.

West Palm Beach, Fla.—By Board of County Commissioners for grading and hard surfacing road between Boynton & Delray to W. E. Watson.

Macon, Ga.—Council has cancelled contract with John H. Lowe Co. of Atlanta for paving Forsyth st. and has awarded same to Southern Engineer & Construction Co.

Richmond, Ind.—By County Commissioners contract for building of Richmond and Newport turnpike to Foster Construction Company, of Richmond, at \$28,790. There were three other bidders.

Leavenworth, Kan.—Contract for curbing east side of Sixth street, from Elm to Linn; has been awarded to Fred Terry & Son. He submitted bid for laying 334 lin. ft. of curbing at 34 1/4 cts. per ft.

Pittsburgh, Kan.—By City, to Thogmartin & Gardiner, of Fort Scott, for macadamizing E. Fourth st., 8 in. thick and 20 ft. wide, at \$1.65 per lin. ft., and E. Seventh st., 8 in. thick and 18 ft. wide, at \$1.44 per lin. ft.

Louisville, Ky.—Granite from North Carolina will be used in reconstruction of Main and Rowan sts., contract for 200,000 blocks, more or less, having been awarded to Harris Granite Quarries Co. on bid of \$65 a thousand, making contract worth about \$13,000.

Baltimore, Md.—By Board of Awards, to Elder Paving & Contracting Co., contracts 14 and 15, for paving work in Annex for Commission for Opening Streets. The Elder concern, lowest bidder for each contract, bid \$3,857 for contract 14, which calls for vitrified brick, and \$24,270 for contract 15, a bituminous concrete job. Patrick Flanigan & Sons was next lowest bidder for both contracts, bidding \$4,060.50 for contract 14 and \$24,592 for contract 15.

Baltimore, Md.—By Board of Awards, Paving Contracts Nos. 40 and 41, including improvement of various streets, to Standard Contracting Co., at \$30,215 for Contract No. 40, and to Filbert Paving & Contracting Co., at \$14,787, for Contract No. 41.

Malden, Mass.—For granolithic sidewalk on Dexter st. and Woodland road, to Everett Concrete Construction Co., at \$1.60 per sq. yd. For repaving Ferry st., to John D. Devir, at 50 cts. per sq. yd.

Elizabeth, N. J.—Only one bid was received for paving of Park av. from the Standard Bitulithic Co., who agreed to do work for \$22,952.20. Three bids were received for paving of Martin st., between Smith and Miller sts. The bidders were Samuel Sampson, \$12,569.50; Patrick Faughnan, \$12,677.20, and James J. Potts \$12,884.05. For grading Closer st., from Murray st. to Linden ave., two proposals were presented. Henry Wilhelm, Jr., submitted a bid for \$325.40, and Christian Wade put in a proposal for \$443.30. All of bids were referred to Street Committee.

Hackensack, N. J.—By Board of Freeholders to E. C. Humphrey of Hackensack, contract for improvement of one mile and 120 ft. of road on Fort Lee turnpike through Bogota at \$70,329. Improvement is to be made on what is known as first section of Fort Lee turnpike which is 5,400 ft. long.

Jersey City, N. J.—Uvalde Asphalt Paving Company repeated its bid of \$1.85 per sq. yd. for sheet asphalt when bids for improvement of West Fourteenth and West Fifteenth sts. were opened at Bayonne City Council. Uvalde's bids were in each case lowest. Bids received for West Fourteenth st. improvements, and also for Twenty-third, Twenty-fourth and Mechanics sts. were as follows: Uvalde, \$1.85; Sicilian Asphalt Company, \$2.10; McGibboney Company, \$2. Ave. F.—Uvalde, \$1.85; Sicilian, \$8; McGibboney, \$1.90.

Perth Amboy, N. J.—For grading Neville st., from Cornell st. to Groom st., bids were as follows: Graham & McKeon, 34 cts. per cu. yd.; Liddle & Pfeiffer, 28 cts. per cu. yd.; Jens L. Mathiasen and Peter Hansen, 33 cts. per cu. yd. Contract was awarded to lowest bidder.

Brooklyn, N. Y.—Bids have been opened by President Maurice E. Connolly in Queens Borough Hall for 21 highway improvement jobs and sewers, aggregate of lowest bids being \$270,105.38. Largest undertaking is that of widening roadway of Myrtle ave., from Brooklyn Borough line to Cooper ave., Glendale, about 1½ miles, repaving with improved granite blocks and with old granite blocks split and redressed, on concrete foundation. Roadway is to be widened by taking 2½ ft. each of sidewalk on either side of roadway. Lowest bidder for work is Eon Engineering & Contracting Co. Amount of bid, \$178,943.80. Following were lowest bidders on contracts below named, regulating, grading and laying sidewalks with amount of bid named: Jackson ave., from Steinway ave. to Woodside ave., Long Island City, F. J. Clancy, \$8,710; North side of Polk ave., from Alburtis to Junction ave., Corona, McBride & Gallan, \$2,761.50; Graham ave., from Vernon ave. to Sherman st., Long Island City, Astoria Contracting Co., \$6,085; Sherman st., from Ridge st. to Grand ave., Astoria Contracting Co., \$10,550.50; In Forest ave., from Cornaga ave. to Bayview ave., in Brandreth ave., from the boulevard to ocean, and on various streets in Far Rockaway, to William Crovello, \$4,195.05; Jackson ave., from Junction ave. to Fifty-fourth st., Corona, Denis McCarthy, \$16,922.50; Broadway, from Hoffman boulevard to Clermont ave., Elmhurst, Freeman Hess Co., \$740; north side of Myrtle ave., from Onderdonk ave. to Forest ave., Ridgewood, Peace Bros., \$140; Onderdonk ave., from Willoughby ave. to Elm st., Ridgewood, Grady Bros., \$4,129.

Nyack, N. Y.—By Bergen County Board of Freeholders to Edwin C. Humphrey, of Hackensack, contract to build one mile and 120 ft. of road on Fort Lee turnpike through Bogota at

cost of \$70,329.60.

Penna. Yan, N. Y.—Kelly & Brennan, contractors of this village and Geneva, have been awarded contract for construction of state road between this village and Halls, north of Penn Yan.

Rochester, N. Y.—By Board of Contract and Supply as follows: Grading and walks on Milbank st., Frank W. Crouch, \$668.25; brick pavement in Trust st., John Petrossi Company, \$6,314.20; grading on Ellicott st., Frank W. Crouch, \$731.

Syracuse, N. Y.—Bids for paving Beverly road are as follows: Guy B. Dickison, vitrified block, \$8,393.60; asphalt, \$7,697.60; wood block, \$10,597.60; macadam, bituminous filler, \$7,117.60. Warner-Quinlan Asphalt Co., vitrified block, \$8,319.50; asphalt, \$7,785.90; wood block, \$10,755.50. F. J. Baker, vitrified block, \$8,209.80; asphalt, \$7,653; wood block, \$10,228.20; macadam, water bound, \$7,212.20. Lowest bidders on other contracts were as follows: Grading Livingston ave., from Euclid ave. to Stratford st., Albert Gaffey, \$814; sidewalk on north side of West Genesee st., from Sand to Geddes st., A. Mondo and Cuspito & Lammonno, tied at \$284.38; sidewalk on both sides of Clarendon ave., from Ackerman ave. to Westcott st., Salt City Paving Co., \$954.90; both sides of South Salina st., from Onondaga st. to Adams st., J. G. Barr, \$497.90; north side of West Onondaga st., from South Salina st. to Clinton st., J. G. Barr, \$166.25.

Syracuse, N. Y.—Over 20 contracts amounting to more than \$50,000 have been awarded by Board of Contract and Supply. They call for pavements, sewers, grading, sidewalk and other improvements ordered by Common Council. Largest paving contract awarded is for Tennyson ave., from Milton ave. to Avery ave., which was awarded to Guy B. Dickison at \$10,664.90. Asphalt is to be used. Three other paving contracts were awarded to Mr. Dickison. That for Madison st., between University and Irving ayes. was let for asphalt at \$7,636.25. The contract for paving McCormick ave. with asphalt was awarded to the same contractor for \$3,608.50. In West Belden ave., between Liberty and Eureka sts., the paving contract is only for the sides of the street for which the property owners have to pay and does not include the railway strip. The contract is for \$5,918.20, and asphalt is to be used. Two contracts for resurfacing pavements with asphalt were awarded to the Warner-Quinlan Asphalt Co., the lowest bidder. One contract is for resurfacing E. Willow st., from North State st. to Townsend st., and Townsend st., from E. Willow st. to James st., not including the railway strip, which was let at \$4,330.70. The other is for resurfacing Tracy st., between N. West and Plum sts., the contract being for \$2,383.16.

White Plains, N. Y.—To Edward Jackman, contract to lay sidewalk on north side of Rockledge ave., from Hillside ave., about 200 ft. east, for \$929.

Cincinnati, O.—By Board of County Commissioners, to James Malarky, at \$8,668, for repairing Springfield Pike, from Wyoming to Glendale. Albert Reinhardt is Clerk.

Cincinnati, O.—By Director of Public Service, as follows: Thomas Evans, for paving Stanton ave., from Beecher to Melish sts.; W. P. Flynn, for paving McKinley ave., from South Williams to Delaney sts.; A. J. Brehm, for paving Sweeny st., from Stone to Mill sts., and the street intersection and roadway of the Gilbert Ave. Viaduct; Henkle & Sullivan, for paving sections of Depot and Charlton sts., Durrell and Highland ayes.; the Kirchner Construction Co. for sections of Depot, Ada and Charlotte sts., Gerrard and Gholson ayes, Harlem pl., and for retaining walls and piles on north side of Elberon st., west of Maryland ave.; to Evan Evans, for paving Pitt st., from Ortiz alley to Vine st., and for a sewer in Jester st., from Gordon to Pitts st.

Dayton, O.—It is probable that when Board of Control meets, paving of alley west of Gunkel ave., between Margaret and Gephart, and that east of Wayne ave., from Margaret to Gephart, will be let to Clifton Hoolihan at his bids of \$533.20 and \$571.90, respectively. Paving of alley south of Margaret st., from alley east of Wayne ave. to alley of Gunkel ave., will probably be awarded to G. R. Stattelman, at his bid of \$586.30. For construction of sidewalk on Brown st. in front of No. 937 and opposite Patterson st., it is likely contract will be awarded to John Kirchner, while E. M. Kiser will doubtless be awarded contract for curbing and graveling walks on Leo st.,

from Troy st. west at his bid of 80 cts. a ft. For curbing and guttering of Lorain ave. and constructing sidewalks on that thoroughfare between Brown st. to Linden ave., contract will probably be awarded to John Kirchner at his bid of \$850. Assumption that these contracts will be awarded as outlined, is based upon fact that their bids are lowest.

Springfield, O.—Tabulation of bids upon several improvements authorized by Council some time ago, has been completed in office of Chief Engineer M. J. Bahin. Upon some of paving jobs Board of Control will have option of selecting any one of about 40 different styles on construction. Edward Ryan was low upon paving of Wittenberg ave. and Washington st., while W. F. Payne was low bidder upon the paving of Fisher st., from Columbia to North sts. Lowest bid upon the paving of section of Wittenberg ave., between Buck creek and Pleasant st., was that of Ed. Ryan, \$17,948.52, for a gravel concrete foundation, and cement curbing. Upon sheet asphalt his bid was \$20,391 for Texaco; asphaltic concrete, \$18,123.60, and \$20,391 for asphalt block, with higher bids for higher priced grades of material. On section from Pleasant st. to Euclid ave., Ryan's lowest bid for brick was \$12,839.76 \$13,926 for sheet asphalt, \$13,926 for asphaltic concrete and \$14,765.20 for concrete block and higher upon each style of construction for higher priced grades of materials. On Washington st., his lowest bid on brick was \$10,164.32, with stone concrete foundation, and \$9,657.92 for gravel concrete, with 20 per cent. extra for paving between the tracks. On sheet asphalt, his bid was \$10,647.57, and on asphaltic concrete, \$10,164.32. On Fisher st., Payne's lowest bid was \$1,336.50, for paving with Wassal or Athens block.

Nowata, Okla.—By Board of Aldermen, to Davis Construction Co., at \$10,795, for paving alleys in Paving District No. 7.

Eugene, Ore.—By City Council, for construction of sewer 600 ft. in length in alley between Madison and Monroe, to Ole Soleim, at \$420.

Philadelphia, Pa.—Bids have been received for street cleaning for 1913 as follows: First District—South of South st., between the Delaware and Schuylkill Rivers, Philip E. Eisele, \$199,000. Second District—Between Poplar and South sts. and the Delaware and Schuylkill Rivers, Edwin H. Vare, \$309,000. Third District—Between Poplar st. and Lehigh ave., between the Delaware and Schuylkill Rivers, Edwin H. Vare, \$184,000; James D. Dorney, \$204,000; Frank Curran, \$240,000. Fourth District—Between Lehigh ave. and the county line, east of Broad st., to the Delaware River, Frank Curran, \$222,000; James D. Dorney, \$230,000. Fifth District—Between Poplar st. and Lehigh ave., Broad st. and the Schuylkill River, Peoples Bros., \$190,000; H. A. McClellan & Bro., \$259,600. Sixth District—Between Lehigh ave. and the county line, west of Broad st. to the Schuylkill River, David McMahon Estate, \$183,400; Frank Curran, \$198,000. Seventh District—North of Market st. to the county line, west of the Schuylkill River, Peoples Bros., \$164,900; James Irvin, \$185,000. Eighth District—South of Market st. to the county line, west of the Schuylkill River, Philip C. Eisele, \$114,000; James Irvin, \$177,000.

Dallas, Tex.—Contract for grading of Reiger, Victor, Crutcher and Worth sts., between Henderson ave. and Munger blvd., and grading of Henderson ave., between Junius st. and Columbia ave., has been awarded to firm of Cullom & Bavouset.

Dallas, Tex.—Contract for paving of Pennsylvania ave., from Colonial to Oakland ave., has been awarded by Board of Municipal Commissioners to Texas Bitulithic Co. Five bids were received on job, but that of Texas Bitulithic Co. was recommended by Commissioner Lee, and, consequently, adopted. Total cost of improvement will be \$29,565.54, of which the city's part will be \$12,594.52. Of five bids received, four unsuccessful bidders were: The Creosoted Wood Block Paving Co., which bid \$37,895.27; the Roach-Manigan Co., \$37,955.05 for wood blocks, and \$25,716.50 for Bermudez asphalt; R. C. Stubbs & Co., \$23,612.99 for vibrolithic.

Dallas, Tex.—Contract between city and Creosoted Wood Block Paving Company for paving of Tenth st., from Lancaster ave. to Bishop st., and from Lancaster ave., from viaduct to Jefferson st., have been presented to Board of Commissioners, duly signed by the contractors, and in turn have been approved by the Mayor. Paving of these streets will be two of most important

improvements of the kind undertaken by board during current fiscal year.

Galveston, Tex.—For surfacing Twenty-fourth st., from Ave. M to Ave. N, Hanson's Sons were awarded contract to furnish 900 cu. yds. of mudshell at 84 cts. per cu. yd. W. D. Haden received contract to supply 450 cu. yds. of same material at 88 cts., to be used in surfacing Thirty-sixth st., from south curb line of Ave. K to north curb line of Ave. L.

Sherman, Tex.—By City Council, to F. P. McCormick, contract for brick paving at \$2.24 per sq. yd. Mr. McCormick bid under his own name, but is in the firm of Parker-Washington Co.

Terrell, Tex.—By City Commission of Terrell, contract for constructing 3,500 lin. ft. of sidewalk on West Nash ave. and Lawrence ave., to I. C. Sherwood, of this city, at 11 cts. per sq. ft.

Seattle, Wash.—For grading Beacon ave. to Andrew Peterson at \$7,863.50.

Seattle, Wash.—By Board of Public Works, contract for constructing concrete walks on Eighth ave. West and other streets, to A. J. Baumgartner for \$17,209.

Walla Walla, Wash.—For construction of five miles of State road, to L. Lanning for \$38,900.

SEWERAGE

Dinuba, Cal.—Board of Trustees has called bond election to vote on bond issue of \$42,000 for construction of sewer system. Plans have been prepared by City Engineer of Fresno.

Kingsburg, Cal.—Bonds for \$26,000 have been authorized for installing sewer system. Plans were prepared by Frank A. Lathrop, consulting engineer, Higgins Building, Los Angeles.

Mill Valley, Cal.—Plans and specifications for sewer system have been submitted to State Board of Health.

Los Angeles, Cal.—Bond money may be used for construction of storm sewers in harbor district.

Pasadena, Cal.—City Engineer Van Ornum has been granted permission to buy 330 ft. of storm drain pipe to run from Maple between Elk and Lake.

Bradentown, Fla.—Bond issue of \$75,000 has been voted for public improvements. Some of the funds will be used for extending sewer system.

Alton, Ill.—City Engineer is making surveys for site for septic tank which it is proposed to establish on E. Downes farm, in Upper Alton.

E. St. Louis, Ill.—At meeting of the East St. Louis Board of Local Improvements establishment of sewer district for southern part of city was decided on. Main sewer will follow along Market st. It is estimated cost of constructing new sewer and of improving Market st., from Twenty-first st. to city limits, will be \$103,355.

Rock Island, Ill.—Resolutions have been adopted for construction of sewers in Fourteenth st. and various other streets.

Portland, Me.—Council has authorized construction of sewer along Henry st.

Escanaba, Mich.—T. C. Hatton of Wilmington, Del., a sanitary engineer, has prepared for city of Escanaba a comprehensive plan for its future sewerage and drainage. It contemplates and provides for population of more than 40,000 people in 1950, and embodies all of sewers and drains required for city of that size.

Marshall, Mich.—It is said that Riggs & Sherman Co., of Toledo, O., has prepared plans for system of storm sewers here. Estimated cost, \$25,000.

Lynn, Mass.—Public sewer building in Bernice ave. and Wardwell ave. has been ordered by Municipal Commissioners.

Duluth, Minn.—Petition has been received for sanitary sewer in Grand ave., between Forty-third and Forty-sixth aves. West.

Nevada, Mo.—Plans have been prepared for construction 6,000 ft. of 10-in. vitrified pipe sewer. S. L. Higgins is City Clerk.

Camden, N. J.—City will construct following sewers or drains in and along Tulip st., from Seventh st. east; Second st., from Beckett st. to Line st. and from Spruce st. to Cherry st., and Clover st., from Kaighn ave. to Sycamore st. A. L. Sayers, Street Commr.

Camden, N. J.—City has ordered construction of sewers in various streets.

Irvington N. J.—Ordinance has been passed for laying of sanitary sewers in Park pl., Nesbitt terrace and Prospect ave.

Perth Amboy, N. J.—Proposition of placing sewer in Elm st., between Market and Smith sts., is being discussed.

Trenton, N. J.—Ordinance has been passed to authorize construction of sewer No. 565, in Division st., also construction of Sewer No. 566, in Ellsworth ave.

Albion, N. Y.—Board of Sewer Commissioners has decided to engage Ross R. Fernow, of Brooklyn, as engineer to take charge of new sewer construction system for Albion.

Bay Shore, L. I., N. Y.—Another step toward securing sewage disposal system for this place has been taken, when petition, as required by law, was presented to Islip Town Board.

Oswego, N. Y.—Proposition to issue \$200,000 in bonds to be used in constructing sewers on both sides of river has been approved by taxpayers of city at special election.

Sag Harbor, L. I., N. Y.—Establishment of sewerage system being discussed.

Syracuse, N. Y.—Ordinances have been adopted declaring intention to order several local improvements, including sewer in Dale and Dillaye aves., sewer in Wall st., from Richmond ave. to Erie Canal, and sewer in Grand ave.

Syracuse, N. Y.—Sewers for storm water in First and Second Wards costing \$90,000 have been favored by City Engineer Henry C. Allen.

Valley City, N. D.—Plans and specifications have been approved by City Council for construction of trunk sewer system. Estimated cost, \$50,000.

Portland, Ore.—Plans for comprehensive system of sewers draining entire Peninsula district, which slopes toward Columbia River, are being prepared by City Engineer Hurlburt. They provide for construction of 11 separate sewers, 10 of which will drain into the Columbia Slough or into immense intersecting sewer, if it is not found to be feasible to empty them into slough, and remaining sewer will drain into the Willamette River. Plans for Delaware ave. sewer system are nearly prepared and will be filed with Council at next meeting.

Philadelphia, Pa.—The \$7,000,000 municipal loan bill has been carried, of which \$800,000 will be for construction of sewers.

Woonsocket, R. I.—Finance Committee of City Council has voted to recommend ordinance ordering building of main drain and common sewer from westerly end of Sayles st. bridge to Blackstone river near foot of Chestnut st. Committee also recommended resolution appropriating \$47,000 for construction of same.

Dallas, Tex.—It has been decided by Board to construct 6-in. sewer in alley between Harwood and Lewis sts., to the Santa Fe Railway.

Fort Worth, Tex.—Storm sewers to cost approximately \$25,000 will be constructed on Houston and Thirteenth sts. by city.

Temple, Tex.—At special city election 449 votes were cast for municipal ownership of sewer plant.

Salt Lake City, Utah.—City Commissioners have appropriated \$9,535.96 to defray cost of installing additional pump at intercepting sewer pumping station. Pump will be installed about first of year.

CONTRACTS AWARDED.

Fresno, Cal.—To California Road & Street Improvement Co., contract, at \$14,632, for laying sewer in Blackstone ave. Thompson Bros. secured contract for sewer work in Stanislaus ave., from I to Blackstone aves., at \$13,972.

Idaho Falls, Idaho.—To construct sewers, to Parrott Bros., Baker, Ore., at \$19,732.

Quincy, Ill.—By Board of Local Improvement, contract for Washington st. sewer, to Henry Rees, of Quincy, for \$5,218. John N. Garner is Mayor.

South Bend, Ind.—To DePaepe & Cousens contract for installation of pipe sewer on Cottage Grove ave. for \$293.05.

Atchison, Kan.—For White Clay Creek intercepting sewer, to O'Neil Construction Co., of Leavenworth, for \$32,098. Other bidders: McGuire & Stanton, Leavenworth, \$33,697; W. F. Plummer Co., Springfield, Mo., \$36,685; Land Construction Co., St. Joseph, Mo., \$44,848. S. K. McCrary is City Engineer.

Grand Rapids, Mich.—To rebuild Wealthy ave. extension sewer, to J. P. Rusche, Grand Rapids, at \$27,024. Other bids were: Vander Weele Bros., \$28,146; L. C. Hillding, \$28,642; Verhey & Kloet, \$29,660; R. Pickett, \$32,725.

Pipestone, Minn.—For laying sewers in various streets of Districts 17 and 27, to G. S. Redmon, Pipestone, at \$11,353.

Brooklyn, N. Y.—Following are lowest bidders for number of sewers: Eighth ave., from Washington to Pierce, Long Island City, Evergreen Construction Co., \$1,472.40; Summerfield st., from Wyckoff ave. to Seneca ave., Clancy & Van Alst, \$3,055.33; Sherman st., from Webster ave. to the crown 330 ft. north of Paynter ave., Clancy & Van Alst, \$3,147; Sherman st., from Washington ave. to Webster ave., and in Washington ave., from Marion st. to the boulevard, and from Hamilton st. to Hancock st., Long Island City, Evergreen Construction Co., \$5,582.75; Twelfth ave., from Vandewater ave. to existing sewer, about 475 ft. south of Wilson ave., Long Island City, Ford Construction Co., \$1,378.80; Ralph st., from Seneca ave. to Fairview ave., and in Fairview ave., from Ralph to Bleecker, Ridgewood, Clancy & Van Alst, \$10,150.75; for house connections from sewer to curb line in Camelia st., from boulevard to Crescent, Long Island City, Evergreen Contracting Co., \$1,125; same in East ave., from Ninth st. to Nott ave., Long Island City, Evergreen Contracting Co., \$655; sewer in Ely ave., from Jamaica ave. to Broadway, Long Island City, Peace Bros., \$2,292; Hamilton st., from Harris ave., in S. Jane st., Evergreen Construction Co.

Mamaroneck, N. Y.—To Joseph Dimondo for Railroad ave. trunk sewer, at \$12,176.

Rochester, N. Y.—By Board of Contract and Supply for construction of sewer in McConnell pl. and Meigs st. to John Petrossi Company at \$820.

Syracuse, N. Y.—Four sewer contracts amounting to over \$8,000 have been awarded. Largest job is for sewers in a portion of West Belden ave. and Eureka and Liberty sts., let to E. S. Downes at \$4,504.75. Alexander Barr was given two sewer contracts, one for May ave., at \$1,700, and the other for Wyman ave., at \$1,595. The contract for the Lewis st. sewer was let to Antonio Mondo at \$261.50.

White Plains, N. Y.—To Edward Jackman, contract to lay lateral sewer in First st. for \$517.50.

Niles, O.—By Board of Control for construction of Holford st. sewer to James McCracken, Warren, \$881.64. Other bids as follows: Frank Minnelli, Pittsburgh, \$1,129; Ed. Diorio, Youngstown, \$1,081.90.

Springfield, O.—Four contracts have been awarded by Board of Control for construction of sewers in different parts of city. Lowest bids upon all jobs were accepted by Board. Fidler and Brock were awarded contracts for construction of sewers in Warder st., from Greenmount to Belmont aves., for \$3,767.24; and in Pleasant st., from Western ave. to the first alley west of Amelia st., for \$2,423.90. M. J. Cooney was awarded contract for construction of sewer in High st., from Yellow Springs to Race st., for \$901.90; and in Spring st., from Pleasant st. to second alley north, for \$165.16.

Nowata, Okla.—To construct sanitary sewers, to J. L. Craddock, Nowata.

Eugene, Ore.—By City Council, for grading and graveling of Second st., from Monroe to Madison, to A. C. Matthews, at \$1.79 per yd.

Dallas, Tex.—For construction of storm sewer in Carondelet st. and Ross ave. to C. W. Olcott at \$707.50.

Dallas, Tex.—Contract for construction of two 6-in. sanitary sewers has been awarded to C. W. Olcott. One of these sewers is to be placed in Clarence st. and other from the alley between Cole ave. and Travis st., to Tuttle st. First of these sewers is to be constructed at cost of \$379, and other at \$414.

Garland, Utah.—To install sewer system, to H. G. Gilkerson, Salt Lake City, at \$6,619.

Salt Lake City, Utah.—To construct 60-in. corrugated iron-pipe storm sewer in Ninth South st., to T. J. Everill Co., Salt Lake City, at \$4,568.

Bremerton, Wash.—To construct concrete trunk sewer in Park and Warren aves., to L. Y. Staten, Tacoma, Wash., at \$21,000.

Niagara Falls, Ont. Can.—For construction of Lewis ave. sewer to Louis Sacco at \$2,600.

WATER SUPPLY

Bessemer, Ala.—Water mains will be extended to Jonesboro, distance of about 2 miles.

Booneville, Ark.—City Council is contemplating installation of water system. Election will probably shortly be called to vote on bond issue.

Rurbank, Cal.—Election is being considered for voting on bond issue for waterworks system.

San Jose, Cal.—At meeting of Council Board of San Jose Country Club principal task accomplished was appointment of committee to procure and install motor and pump to build reservoir not to exceed 30,000 gallons capacity.

Washington, D. C.—Laying of 1,600 ft. of water mains in various streets has been ordered by Engineering Dept.

Bradentown, Fla.—Bond issue of \$75,000 has been voted for public improvements. Some of the funds will be used for enlarging water works plant.

Camilla, Ga.—Bond issue of \$10,000 has been authorized for improvement of water and light plant.

Lagrange, Ga.—Citizens are said to have voted to issue \$150,000 bonds for water works.

Vollmer, Idaho.—Citizens have voted to issue \$10,000 bonds for water works.

Evanston, Ill.—Election will be held Dec. 16 for voting on \$180,000 bond issue for installation of filter plant.

Richmond, Ind.—Declaring city's plans and specifications for water works franchise and contract are too severe, Richmond City Water Works Company and E. M. Campfield, representing construction company, refused to submit bids for water works franchise and contract advertised to be received by Board of Works. Changes probably will be made in city's plans and specifications.

Coon Rapids, Ia.—Another election will be held Nov. 28 for voting on bonds for extending water mains.

Ossian, Ia.—Installation of water works system is recommended.

Salina, Kan.—Extension of water main is being considered by City Council.

Marion, Ky.—Plans are being prepared for installation of water system here. Estimated cost, \$25,000.

Versailles, Ky.—Election will probably be called to vote on bond issue of \$25,000 for extending water system, and for constructing filtration plant.

Baltimore, Md.—Appropriation of \$160,000 has been asked for laying of water mains in various streets.

Big Rapids, Mich.—Citizens have voted to issue \$50,000 bonds for rebuilding water works from plans of Gardner S. Williams, or Ann Arbor.

Saline, Mich.—Election will be held Nov. 12 for voting on \$30,000 bond issue for construction of water works system.

Faribault, Minn.—Council has instructed City Engineer to prepare plans and specifications for reservoir of about 3,500,000 gals. capacity.

St. Paul, Minn.—South St. Paul Council has awarded South St. Paul Water Co. a 5-year franchise to furnish suburb with water.

St. Louis, Mo.—City Water Commissioner E. E. Wall, of St. Louis, has presented to Board of Public Improvements an exhaustive report recommending preparation for construction of entirely new water works plant at cost of \$12,000,000, to be fitted to supply city's needs until 1960, and also increase of capacity of present plant to total of 150,000,000 gallons of water per day.

Rahway, N. J.—Further improvements to increase efficiency of the municipal water plant have been advocated by Board of Water Commissioners and plans have been adopted for placing new sand, gravel and strainers in eight filters at plant, which will cost approximately \$900.

Trenton, N. J.—Bids for proposed filtration plant are being considered.

Freeport, L. I., N. Y.—Village Board of Trustees has engaged Francis Broadnax, a Manhattan engineer, to draw up plans and specifications for various articles needed in extension of water and light system in local power house, and to submit same to board for consideration, and to advertise for bids.

Gastonia, N. C.—Election will be held Nov. 30 to vote on bond issue of \$10,000 for improving water system.

Clyde, O.—Council has sold \$30,000 bonds to reconstruct and extend water works and electric light plant.

Frankfort, O.—Election will be held Dec. 3 for voting on \$12,000 bond issue for construction of water works system.

Lima, O.—Bond issue of \$100,000 has been authorized by City Council for improvement of waterworks system.

Philadelphia, Pa.—The \$7,000,000 municipal loan bill has been carried, of which \$300,000 will be for improvement of water supply of West Philadelphia.

Bowdle, S. D.—Plans have been completed for water works and electric light system to cost \$22,500.

Arlington, Tenn.—City has voted bond issue of \$10,000 for construction of waterworks system.

Austin, Tex.—Attorney General's Department has approved city of Kaufman water works bonds amounting to \$7,000,

Longview, Tex.—Bonds in sum of \$100,000 have been voted for improvement of waterworks system.

Ferndale, Wash.—Bond issue of \$22,000 has been voted for water works.

Puyallup, Wash.—Bids for 1,900 ft. of wooden pipe to be laid alongside county road, now being paved between Sumner and North Puyallup by the county, connecting with Salmon Springs main, will be advertised for immediately.

Tacoma, Wash.—Resolution has been adopted providing for building of cast-iron water main on South 56th st., from McKinley ave. to East K st.

Racine, Wis.—Bond issue of \$25,000 has been voted for purchase of motor pumping engines.

CONTRACT AWARDED.

Montgomery, Ala.—To Hersey Mfg. Co., Boston, Mass., to furnish 1,000 water meters.

San Francisco, Cal.—To Ross Valve Company, of Troy, N. Y., for 50 operating and regulating valves for high pressure system.

Waycross, Ga.—By City Council, for drilling of artesian well, to Hughes Specialty Well Drilling Co., of Charleston, S. C., at \$5 per ft. for 12-in. pipe and \$4.25 per ft. for 10-in. pipe. Harry D. Reed, Mayor.

Chicago, Ill.—To American Brake Shoe & Foundry Co., 332 Michigan ave., Chicago, at \$14,202, to furnish hydrant and stop-valve castings.

Normal City, Ind.—At approximate price of \$3,500, contract for installation of municipal water plant for Normal City, including 1 mile of water mains and 8 fire hydrants, has been let by Town Board of that place to National Construction Co., of South Bend, Ind.

Muscataine, Ia.—For 200,000 gallon tank and tower, to Des Moines Bridge & Iron Co.

Lancaster, Ky.—By City Council, for improvement of water works system as follows: Tank, Chicago Bridge & Iron Works, of Chicago, at \$5,110, filter, Greer Filter Co., of Pittsburgh, Pa., at \$2,250; addition to dam, J. A. Moynahan, of Richmond, Ky., \$3,000.

Baltimore, Md.—Lowest bid received for construction of filtration plant, which is valued at from \$150,000 to \$175,000 is thought to be that of C. W. Lane, of Atlanta, Ga.

Greenwood, Miss.—By Light and Water Commission, contract to M. Lockett & Co., of New Orleans, for new 3,000,000 gallon pumping engine, at \$7,500.

Malta, Mont.—For constructing about 34 miles of Dodson South Canal, Milk River project, and contracts have been awarded as follows: Schedule 1—To Charles Wilhite & Co., of Boise, Idaho, as follows: 183,000 cu. yds. excav., class 1, 20 cts.; 500 cu. yds. class 2, 50 cts.; 500 cu. yds. class 3, 75 cts.; 25,000 cu. yds. overhaul, 2 cts.; total, \$37,850. Schedule 2—To Charles Wilhite & Co., of Boise, Idaho, 378,000 cu. yds. excav., class 1, 17 cts.; 500 cu. yds. class 2, 50 cts.; 500 cu. yds. class 3, \$1; 40,000 cu. yds. overhaul, 2 cts.; total, \$69,415. Schedule 3—To Charles Wilhite & Co., of Boise, Idaho, 324,000 cu. yds. excav., class 1, 18 cts.; 500 cu. yds. class 2, 50 cts.; 500 cu. yds. class 3, \$1; 30,000 cu. yds. overhaul, 2 cts.; total, \$59,670. Schedule 4—To Winston Bros. Co., Globe Bldg., Minneapolis, Minn., 390,000 cu. yds. excav., class 1, 19 cts.; 10,000 cu. yds. class 2, 28 cts.; 500 cu. yds. class 3, \$1; 10,000 cu. yds. overhaul, 2 cts.; total, \$77,600.

Perth Amboy, N. J.—To Liddle & Pfeiffer contract for laying about 1,000 ft. of 24-in. water main by Board of Water Commissioners. Two bids were received for 24-in. main extension as follows: Liddle & Pfeiffer—Pipe, 90 cts. a ft.; yellow pine support, \$42 a thousand board feet; clay puddle, \$1.90 a cu. yd. H. H. Holmes, of Jersey City—Pipe, \$1.85 a ft.; yellow pine, \$60 a thousand board feet; clay puddle, \$1.45 a cu. yd.

Lockport, N. Y.—To Frank J. LeValley, by Aldermen, contract for construction of water main in East ave., from present main near City Hospital easterly to Lovers' lane, on his bid of \$2,340. Town and Country Club petitioned for improvement. C. B. Whitmore Co. also submitted bid for work in sum of \$2,644.

Beech, N. D.—To Haggart Construction Co., of Fargo, contract for water mains amounting to about \$35,000.

Dayton, O.—To Buffalo Meter Company contract for furnishing meters as follows: 1,500 $\frac{1}{2}$ -in., at \$5.60; 100 $\frac{3}{4}$ -in., at \$8.40, and 50 1-in., at \$11.20.

Dayton, O.—Inasmuch as Chicago Bridge & Iron Works Company, of Chicago, was only bidder, it is likely that contract for construction of steel water

tower in Dayton View, on north side of Lefever st., about 500 ft. west of Salem ave., will be awarded to that company at its bids of \$14,200. Specifications provide that tank shall have capacity of 300,000 gallons, and that the tank and tower shall be 85 ft. high. Tank will be about 40 ft. in diameter.

Lima, O.—To construct soft water reservoir at Lima State Hospital, to Seymour & Remmick, Findlay, O., at \$5,900.

Port Arthur, Tex.—For furnishing material for extension of water works system as follows: Valves and hydrants, Rensselaer Valve Company, Troy, N. Y., \$2,000; pipe, United States Steel Company, \$11,000.

Bridgewater, Va.—To install water and sewer systems, to Newport News Construction Co., Newport News, Va., at \$22,704. Contract includes about $\frac{3}{2}$ miles of water mains, $\frac{3}{2}$ miles of sewers, tower, tanks, etc.

Seattle, Wash.—For laying water mains on 33 Ave. N to Elliott Construction Co. at \$2,149.85.

Appleton, Wis.—To Jewell Water Improvement Co., of Chicago, contract for new filtration plant at \$49,809.

La Crosse, Wis.—For waterworks material as follows: Cast iron pipe, W. S. Cast Iron Pipe and Foundry Company, Chicago, at \$43,000; hydrants and valves, R. D. Wood & Company, Philadelphia, Pa., \$2,827; cast iron specials, B. Ott & Sons, La Crosse, \$1,500.

LIGHTING AND POWER

Mathersville, Ill.—Plans are being made for installation of electric-light plant at Mathersville.

Paris, Ill.—Plans are being prepared for the construction of power plant at Paris. Estimated cost, \$200,000.

Bluffton, Ind.—Nov. 29, has been set as date of electric light election. The amount of \$57,000 was appraised value of plant.

Campbellsburg, Ind.—Plans are being made for installation of municipal electric-light plant.

Altoona, Ia.—Council has granted franchise to Geo. T. Gibson for electric light plant.

Greenfield, Ia.—City has voted \$9,000 bonds for modernizing electric light plant.

Hudson, Ia.—Council is contemplating installing electric light plant to cost \$4,500.

Manson, Ia.—Plans are being prepared for reconstruction of municipal electric light plant.

Scranton, Ia.—Construction of electric light plant at Scranton is contemplated.

Topeka, Kan.—City Commissioners plan to build great white way around State House grounds to correspond with lighting system now in use on Kansas ave. and W. Ninth st. Poles of same design and lights of like arrangement would be used. Lighting system would extend entirely around grounds, or distance of 8 blocks. It is estimated that cost would be nearly \$10,000.

Kalamazoo, Mich.—Installation of new municipal lighting plant is being considered.

Kalamazoo, Mich.—City is considering plans for installation of ornamental street-lighting system.

Pinconning, Mich.—Plans are being considered for installation of new street lighting system.

Sebewaing, Mich.—Election will shortly be held to vote on proposition to issue \$5,000 of bonds for improvement of municipal electric-light plant.

Boyd, Minn.—Village is considering installing electric light plant to cost \$7,500.

Brownston, Minn.—Village has voted \$2,500 additional bonds for completing electric light system.

Ballston, Spa, N. Y.—Mass meeting of citizens of this village has been held to discuss system of lighting for village.

Ithaca, N. Y.—Further steps toward improved street lighting system in principal business streets will be taken by Common Council. Efforts will be made to have boulevard lamps installed before close of present month in sections of State, Tioga, Aurora, Cayuga and Seneca sts.

Syracuse, N. Y.—Board has authorized Secretary John J. Halloran to advertise for proposals for completing heating system at City Hospital for Contagious Diseases, for which funds were provided by recent bond issue.

Clyde, O.—Council has sold \$30,000 bonds to reconstruct and extend electric light and water works plant.

Bradford, Penn.—Construction of municipal electric light plant is being considered.

Goldsboro, Pa.—Goldsboro has voted \$3,000 loan to build electric plant to provide for lighting of borough.

Bowdler, S. D.—Plans have been completed for electric light and water works system to cost \$22,500. Electric light plant will be installed at once.

Provo, Utah.—City Commission has granted franchise to erect and operate gas plant in this city to A. F. Berringer, of Salt Lake.

Newport News, Va.—The Special Lighting Committee of City Council has adopted plan for new system of street lighting. Estimated cost of new system based on 10-year contract is \$10,755. Present annual cost of maintaining street lighting system is \$9,548. It is also estimated that new system will give 40 per cent. more light than the old.

Petersburg, Va.—Installation of "white way" is being considered.

Racine, Wis.—Expenditure of \$10,000 for improvements and extensions to its systems is planned by Racine Gas-light Co.

CONTRACT AWARDED.

Belleville, N. J.—By Town Council, contract for installation of ornamental lighting system on Washington ave., to Public Service Electric Co., Newark.

Morgan City, La.—For construction of municipal electric light plant, to J. W. Taylor, New Iberia, La., at \$9,700.

Morris Plains, N. J.—For installation of electrical apparatus in State Hospital at Morris Plains, to Beaver Engineering Co., Newark, N. J., at \$20,500.

Galveston, Tex.—No action has been taken by Board relative to awarding contract for new condenser to be used at Alta Loma station. Bid of Randall, Lovegrove & Wyman, of Dallas, totaled \$2,480, and was recommended by Superintendent of Electricity W. D. Master-son and Chief Engineer E. J. Owin.

FIRE EQUIPMENT

Corona, Cal.—Additional fire hose will probably be purchased.

Glendale, Cal.—Bonds for acquiring of additional fire apparatus to extent of \$20,000 have been voted on favorably.

Belvidere, Ill.—About 400 ft. of hose will be bought by purchasing committee.

Atlantic, Ia.—Purchase of new hose and other apparatus is being considered.

Sioux City, Ia.—Purchase of motor combination chemical and hose wagon is recommended.

Atchison, Kan.—Purchase of motor aerial truck, one motor combination chemical and hose wagon, auto for chief, 2,000 ft. of 3-in. and 1,000 ft. of 2½-in. hose, fire-alarm apparatus will probably be authorized.

Galena, Kan.—Motor fire truck will probably be purchased.

Leavenworth, Kan.—Commissioner R. E. Nelson and Fire Chief Bahler have drawn up set of specifications for automobile fire truck. Specifications call for no particular type of engine or chassis. Main requirements are in matter of equipment. Bed of car is to carry 1,200 ft. of 2½-in. hose. There is to be chemical tank with capacity of 40 gallons, over which is to be suspended hose basket carrying 200 ft. of ¾ chemical hose. Truck is to be fitted with one rapid hoist extension ladder, comprising 22 ladders, each 12 ft. in length, fitted with pulleys and ropes for its extension. One 12-ft. roofing ladder, fitted with roof hooks is to be complemented with light 12-ft. ladder which may be attached to it.

Lynn, Mass.—City's fire-fighting equipment will be increased by addition of four pieces of motor apparatus in next two weeks or some time before Nov. 15.

South Dartmouth, Mass.—Erection of new engine is being considered.

Duluth, Minn.—Fire Department has been authorized to advertise for 1,000 ft. of new hose.

Wymore, Neb.—Purchase of chemical engine and hose cart is being considered.

Sparks, Nev.—Purchase of chemical engine and other apparatus is being considered.

Bayside, N. Y.—New fire station will be erected at cost about \$7,500.

Lackawanna, N. Y.—City is considering purchase of motor fire truck.

Nyack, N. Y.—In District No. 6 proposition authorizing Town Board to sell the fire engine house owned by the taxable inhabitants for price not less than \$500, proceeds to be applied to purchase of hose wagon or other suitable fire apparatus for use of John Paulding Engine Company has been carried.

White Plains, N. Y.—The voters of Eastchester have approved by majority of 93 of proposition to purchase auto propelled hook and ladder truck.

White Plains, N. Y.—At coming village election voters will have chance to vote on proposition for \$15,000 fire house for Hope Engine Company.

McKeesport, Pa.—At meeting of fire committee of councils estimates on cost of installing automobile trucks in Central fire station, replacing the present trucks will be considered.

York, Pa.—Trustees of the Vigilant Fire Company are considering purchase of self-propelled chemical engine and hose wagon. Specifications have been prepared.

Williamsport, Pa.—Purchase of combination chemical and hose wagon is being discussed.

Dallas, Tex.—Commissioner Bartlett has reported that several bids had been received for furnishing city with 4,000 ft. of fire hose, but he recommended that all of these bids be rejected and Board authorize purchase of that amount of hose at prices not exceeding those submitted.

Wheeling, W. Va.—Plans have been drawn for new fire department station in this city. The building will take place of present Atlantic engine house situated at Seventeenth and Eoff sts., and according to plans will cost \$28,000.

Janesville, Wis.—Bids for motor propelled combination hose wagon and fire police patrol will be advertised for by city of Janesville within very short time.

La Crosse, Wis.—Purchase of motor fire truck is being considered.

Manitowoc, Wis.—City is in the market for combination chemical auto hose wagon. J. H. Kratz is Chief of Fire Department.

CONTRACTS AWARDED.

Washington, D. C.—For furnishing 15,000 ft. 2½-in. cotton, rubber-lined hose to Eureka Fire Hose Mfg. Co., of New York City, at \$1.10 per ft.

Jerseyville, Ill.—By Fire and Water Committee contract for furnishing 500 ft. of double-jacket hose to Diamond Rubber Co., of St. Louis, at 85 cts. per ft.

Logan, Mich.—For furnishing motor fire engine to American-La France Fire Engine Co., of Elmira, N. Y., at \$9,000.

East Youngstown, O.—To Gamewell Fire Alarm Telegraph Co. contract for installation of fire alarm system at \$2,110.

Portland, Ore.—For furnishing motor apparatus as follows: American-La France Fire Engine Co., represented by A. G. Long, 1 pumping engine, \$9,000; 1 aerial truck, \$12,500; 6 combination chemical and hose cars, \$5,800 each; H. L. Keats Co., agents for Pope-Hartford, 2 combination chemical and hose cars at \$6,000 each.

BRIDGES

Bradentown, Fla.—Bradentown has voted in favor of further bond issue of \$75,000 for public improvements by majority of 130 in favor of and 21 against. Money will be used partly for constructing new bridges across Jacques' and Weil's Creeks.

Rome, Ga.—County Commissioners have decided to build concrete bridge 40 ft. wide over Dry Creek, on Summerville pike, and to raise road to approaches to bridge.

Ottawa, Ill.—Plans are being considered for erection of bridge to span Vermillion river near Jonesville; estimated cost, \$20,000.

Des Moines, Ia.—Board of Supervisors will spend \$100,000 on concrete bridges.

New Bedford, Mass.—Commissioners have approved plans and specifications for new bridge, construction of which Legislature has appropriated \$30,000.

Duluth, Minn.—Engineer was directed to examine bridge on old Vermillion road where it crosses Tischer's Creek, and report its condition to the Council.

Nyack, N. Y.—Estimate of bridge proposed on Central ave., Pearl River, is \$1,400.

Raleigh, N. C.—City and Central Hospital for Insane have arranged jointly to build concrete and steel bridge at Rocky branch, at entrance to hospital grounds and on asylum road.

Belen, N. M.—Board of County Commissioners of Valencia County is making preparations to erect bridge across Rio Grande here as soon as possible.

Cincinnati, O.—Project of new viaduct at Queen City ave., as proposed by Councilman John Eckert, of Twenty-fourth Ward, has been approved by Council committee.

Cuyahoga Falls, O.—New bridge at Taylor st., extending across Front st. to Main st. is being considered.

Cuyahoga Falls, O.—Plans have been submitted for proposed bridge to be

erected over Bailey road, north of the Falls.

Cuyahoga Falls, O.—County Commissioners are expected to have plans for new Glens bridge ready in a short while.

Philadelphia, Pa.—The \$7,000,000 municipal loan bill has been carried, of which \$200,000 is for erection of new bridges.

Washington, Pa.—New bridge over Monongahela River, at Brownsville, with approaches and franchises and damages to private property is estimated to cost somewhere between \$300,000 and \$400,000, and Washington County's half will be \$150,000 to \$200,000.

Wilkes-Barre, Pa.—Forty-nine bridges have been recommended for county in report submitted to Judge Garman by grand jury in order of their necessity, for following places: Bear Creek township, West Wyoming borough, Shickshinny, Wilkes-Barre city, Hunlock township, Butler township, Ross township, Kingston township, Hollenback township, Black Creek township, Nescopeck township, Dennison township, Union township, Ashley borough, Huntingdon township, Sufarleaf township, Swoyerville borough and Exeter township. Appropriations for bridges in places named vary from \$200 to \$2,000.

Fort Worth, Tex.—County Commissioners have set aside funds, amounting to \$140,000 in all, to be used for construction of Riverside and Samuels aves. bridges.

San Angelo, Tex.—Contract for drafting plans and specifications for construction of concrete viaduct over North Concho River at foot of Chadbourne st. has been let to C. M. Davis, of Fort Worth. Viaduct is to be erected some time during early part of 1913. It will cost in neighborhood of \$50,000. Bids will be asked for later.

CONTRACTS AWARDED.

Augusta, Ga.—Streets and Drains Committee of City Council have awarded contract for Archibald Butt Memorial Bridge to Concrete Engineering & Construction Company of Birmingham, Ala., price being \$20,852. There were only five bidders, each being from out-of-town. Bids opened were as follows: C. W. Requarth, Charlotte, N. C., \$28,563; Carolina Construction Co., Greenville, S. C., \$29,350; W. Z. Williams & Co., Macon, Ga., \$38,000; Thomas Sheehan, Richmond, Va., \$26,250; and Concrete Engineering & Construction Co., Birmingham, Ala., \$20,852. Bid of successful contractor does not represent the entire cost of the bridge for allowances have been made for tearing down old bridge, placing steel in new bridge, and for purchase of steel, which carries total price of the bridge to \$25,984.16. Estimate that was made by Commissioner of Public Works Nisbet Wingfield on cost of bridge was \$26,000.

Millford, Ill.—W. H. Shons, Freeport, at \$4,000, for construction of reinforced concrete bridge in Ash Grove Township.

Shreveport, La.—By City Commission, contract to Modern Steel Construction Co., Waukesha, Wis., at \$168,930, for construction of steel superstructure bridge over Red River, at Shreveport.

Baltimore, Md.—Water Board has recommended that contract for building bridge near new Loch Raven dam be awarded to Max Ways' Singer-Pentz Construction Co., lowest bidder for the work. The recommendation was approved. Ways' concern bid \$20,962.80, while Lane Bros. Co., next lowest, bid \$21,014.

Hancock, Mich.—At regular meeting Portage Township Board let two bridge contracts to Illinois Bridge Co. for reinforced concrete bridges, one of 35-ft. span over Otter River, six miles south of Superior Mine, and one of 44-ft. span over Pilgrim, one mile below Superior. Plans show two gracefully arched bridges, and are pronounced satisfactory by Township Engineer, H. W. Fesling. Price of two, \$3,644, is little more than one bridge would have cost on previous figures. Contract only stipulates that township shall furnish crushed rock from the Superior dump, which costs them nothing.

Mount Vernon, N. Y.—To Frank Nordone for Mount Vernon-Yonkers bridge, at \$19,500.

Purdy's Station, N. Y.—To P. Hennessey Company, for bridge at Purdy's Station, for \$4,990.

Syracuse, N. Y.—Bids have been opened for construction of new North st. bridge, and Groton Bridge Co. was awarded contract. It was low, with bid of \$9,649. Other bidders were: Seneca Engineering Co., of Montour Falls, \$11,320, and United Construction Co., Albany, \$9,944.

Utica, N. Y.—By Board of Contract and Supply contract for construction of temporary bridge over Mohawk River in North Genesee st., to J. G. Dewhurst for \$2,270. Mr. Dewhurst was only bidder.

Cincinnati, O.—By Board of County Commissioners, contract to James Marlarky, Norwood, at \$8,668, for construction of bridge over Mill Creek, on Clark road, in Sycamore Township.

Yardley, Pa.—Contract for repairs to College ave. bridge, by Bucks County Commissioners, to Carr R. Camp, of Philadelphia, for \$1,725.

Dallas, Tex.—For construction of concrete culvert in Haskell ave., between Ross and Roseland aves., to Estep & Jones at \$7,497.50.

MISCELLANEOUS

Oakland, Cal.—Resolutions have been adopted by City Council adopting plans and specifications for construction of safety station on East Fourteenth st., near Fruitvale ave., and resolution calling for bids for construction of safety station on East Fourteenth st., at Fruitvale ave.

Los Angeles, Cal.—Instructions to City Engineer to at once proceed with plans for proposed Arroyo Seco parkway have been decided on by Streets Committee of Council.

San Francisco, Cal.—Resolution in-dorsing Fillmore st. tunnel project and petitioning Board of Supervisors to expedite matters so that construction of tunnel will begin at an early date has been passed.

San Francisco, Cal.—Plans and specifications for construction of two sections of seawall to extend from Mission to Harrison sts. have been approved by Board of State Harbor Commissioners. Secretary has been instructed to advertise for bids, and the contracts will be let in about one month. Work will involve an expenditure of about \$500,000.

Waterbury, Conn.—Board of Health has voted to include in its estimates for coming year to be submitted to Board of Finance sum of \$30,000 to be expended for repairing of garbage plant, doubling of its capacity, and for collection and disposal of garbage during coming year.

Wilmington, Del.—Bill will be considered authorizing city to borrow \$1,000,000 to erect new City Hall.

Macon, Ga.—Erection of new jail is recommended.

Waycross, Ga.—Improvement and school bonds in sum of \$100,000 will be sold to highest bidder on Nov. 29. Harry D. Reed, Mayor.

Chicago, Ill.—A proposed bond issue of \$500,000 to build new detention hospital and to purchase land in connection with county poorhouse has been authorized. Also a proposed bond issue of \$1,

000,000 for new buildings in connection with county poorhouse at Oak Forest, and to purchase land for a public cemetery.

Des Moines, Ia.—Board of Supervisors will spend \$12,000 for juvenile home.

Lexington, Ky.—Issue of \$200,000 in bonds has been passed.

Shelbyville, Ky.—Citizens of Shelbyville and Shelby County are jubilant over winning of the \$75,000 bond issue to build new courthouse.

Chicopee, Mass.—City of Chicopee will receive bids until 12 M., Nov. 14, for \$19,000 of 4 per cent. city hospital loan 1912 bonds.

Lynn, Mass.—Annex to City Hall is being planned.

New Bedford, Mass.—Mr. Negus, of the Water Works Board has recommended acceptance of bid of Francis J. Denby, who offered a "Reo the Fifth" car, fully equipped, and with special equipment, for sum of \$1,296 for use of department.

Joplin, Mo.—Sidney J. Hare, the landscape architect, has been given the supervision of a \$200,000 park system for Joplin.

Maplewood, N. J.—Bids for issue of \$33,000 of four and one-half per cent. bonds, coupon or registered, of township of South Orange, issued for the purchase of land for public parks, will be received in office of township, in the municipal building, Maplewood, N. J., until November 19, 1912, at 8 o'clock P. M.

Newark, N. J.—Pending completion of garbage destructor which Board of Works proposes to build in meadows, garbage contract, which expires first of year, may be renewed for one instead of five years.

Rochester, N. Y.—Board has appropriated \$900 for equipment and embellishment of Front st. playground.

Toledo, O.—The proposed \$750,000 bond issue for improvement of parks and elaboration of magnificently planned parkway system has been carried by vote of three to one.

Youngstown, O.—Board of Control has decided to reject bids for proposed municipal building.

Youngstown, O.—The new city building will cost close to \$300,000 if recommendation made by Service Director and Board of Control to Council is considered and carried.

Portland, Ore.—It is planned to install two playgrounds in Mt. Tabor Park, one in the northern and other in southern sections. Mische recommended that the Water Board turn over to Park Department parcel of ground near reservoirs as site for playground features.

Philadelphia, Pa.—The \$7,000,000 municipal loan bill has been carried as follows: For the construction of main sewer, \$400,000; for the construction of branch sewers, \$400,000; for the erection of new bridges,

\$200,000; for grading street, \$600,000; for paving intersections and in front of un-accessable property, \$150,000; for resurfacing asphalt streets, \$500,000; for improving country roads, \$300,000; for repairs to streets, \$200,000; for the improvement of the water supply of West Philadelphia, \$300,000; for the acquisition of land for harbor improvement and the construction of wharves, etc., \$1,600,000; for the improvement of South Delaware ave., \$250,000; for the acquisition of land and construction of buildings for the Philadelphia Hospital for Contagious Diseases and the Home for the Indigent, \$250,000; for the purchase of fire apparatus, \$100,000; for the erection of new and improvement of existing police and fire stations, \$200,000; for the erection of a machine shop, \$50,000; for the improvement of Fairmount and other parks, \$500,000; for the payment of mandamus, \$900,000; for children's playgrounds, \$100,000. Total, \$7,000,000.

Pittsburgh, Pa.—Sum of \$90,000 is asked for erection of public comfort stations.

Pascoag, R. I.—Harbor improvement and park loans have been approved.

Woonsocket, R. I.—Voters have approved of harbor improvement loan.

Dallas, Tex.—It is expected that on Nov. 11, City Secretary will advertise for bids on \$728,000 improvement bonds recently voted for.

Dallas, Tex.—Commissioner F. W. Bartlett has recommended to Board of Commissioners purchase of new automobile for Chief J. W. Ryan of police department.

Dallas, Tex.—Plans for new city hall building will be completed about Nov. 10.

Houston, Tex.—Houston Chamber of Commerce has secured consent of Board of Trustees of Rice Institute to use institute tract in Louisiana st., adjoining West End ball park on east, for playground purposes.

Sherman, Tex.—City Treasurer Frank A. Batsell has received \$198,000 for bonds recently sold for permanent city improvements. City Council has authorized him to distribute money to different funds voted in recent bond election as follows: For street improvements, \$100,000, school buildings \$10,000, fire department, \$13,000, water department, \$10,000.

Seattle, Wash.—City Council has engaged eastern expert to make estimate of cost of establishing municipal telephone system. It is council's intention to submit to voters on March 4 next proposition to vote bonds for such system.

Spokane, Wash.—Title has been acquired by Park Board to 19 lots in vicinity of Mission ave. and Cannon st., from Theodore Chamberlin for playground site.

TOO LATE FOR CLASSIFICATION

BIDS ASKED FOR

STATE	CITY	REC'D UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREETS AND ROADS				
New Jersey	Jersey City	Nov. 18, 2 p.m.	Imp. Germania Ave.	E. B. See, Clk. Bd.
New York	Long Island City	Nov. 22, 11 a.m.	Constn. sidewalks & repairing sheet asphalt pavements	M. E. Connolly, Boro. Pres. City Clerk.
Washington	Leavenworth	Nov. 26, 8 p.m.	Imp. several streets	J. T. Scott, Co. Aud.
Indiana	Vincennes	Dec. 3, 2 p.m.	Constn. gravel roads	City Clerk.
Georgia	Rome	Dec. 9	Constn. pavements	City Clerk.
SEWERAGE				
Iowa	Burlington	Nov. 21, 9 a.m.	Constn. 8-i. pipe sewer	H. G. Vollmer, City Engr.
MISCELLANEOUS				
Indiana	Indianapolis	Nov. 20	Furn. 24 police bicycles	J. S. Sisloff, Chn. Bd. Pub. Sfty.
Dist. Col.	Washington	Dec. 7, 10.30 a.m.	Furn. hose, packing & asbestos gaskets	F. C. Boggs, Gen. Pur. Officer.



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